Guideline for Mainstreaming Disaster Risks into Investment Decisions Ethiopia

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Asian Disaster Preparedness Center

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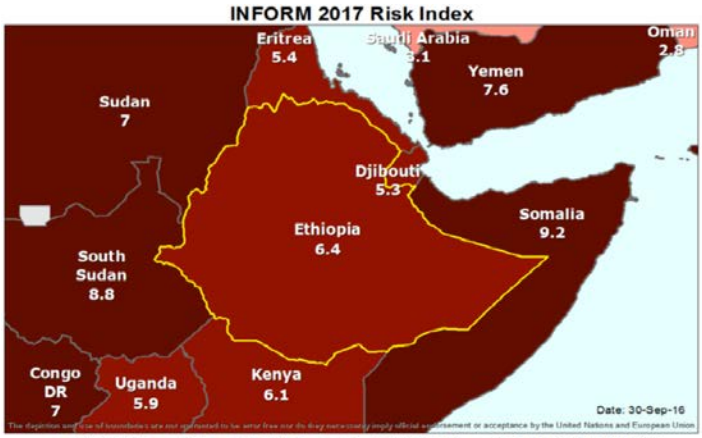
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PART 1: INTRODUCTION

1.1 OVERVIEW OF DRM IN ETHIOPIA

Ethiopia has achieved substantial progress in economic, social and human development over the past decade, achieving rapid and inclusive economic growth averaging 10.9 percent per year since 2004. At the same time, it has faced a series of disasters with increased intensity, coverage and frequency largely due to climate-induced factors. It suffers from a long history of drought due to increasing dependency on rain-fed agriculture and years of extremely low rainfall. In the year 2016, various assessments made both by the government and development partners have indicated that 2016 El Nino event was the strongest since 1997, which posed a great challenge for the disaster risk management capacity of the country. Besides drought, the country faces flash floods and river floods frequently. Torrential rains and corresponding flash floods in 2016 left at least 236,890 people displaced. The belg [1] rains, though late in onset, were heavier than usual both in terms of intensity and geographic coverage. Additionally, the floods hit on the back of nearly 18 months of drought that left communities' coping capacity weakened. Human and livestock epidemics, and urban and forest fires are other kind of hazards that Ethiopia faces almost every year.



	Value	Rank	Trend (3 years)
INFORM Risk	6.4	15	→
Hazard & Exposure	5.6	38	→
Vulnerability	6.7	10	→
Lack of Coping Capacity	6.9	28	→

Figure 1. Ethiopia INFORM Risk Index (Source: Inform, 2017)

[1] Belg is the main rainy season for south and southeast regions of Ethiopia and is considered the short rainy season occurring in the months of March and April.

As per the INFORM[2] 2017 Risk Index (Figure 1), the current level of risk and the trend over previous years in Ethiopia has remained high in view of multifaceted hazards. The elements of risk as well as the coping capacity of Ethiopia is presented in Figure 2. More than 10 million Ethiopians required relief food assistance in 2016. This poses a huge challenge to Government and development partners in responding to current situation as well as putting in place risk reduction measures.

Droughts which are exacerbated by El Niño, combined with extensive flooding, disease outbreaks, and the disruption of basic public services, is having a negative impact on the lives and livelihoods of 9.7 million Ethiopians. Long term meaures are needed to meet these challenges.

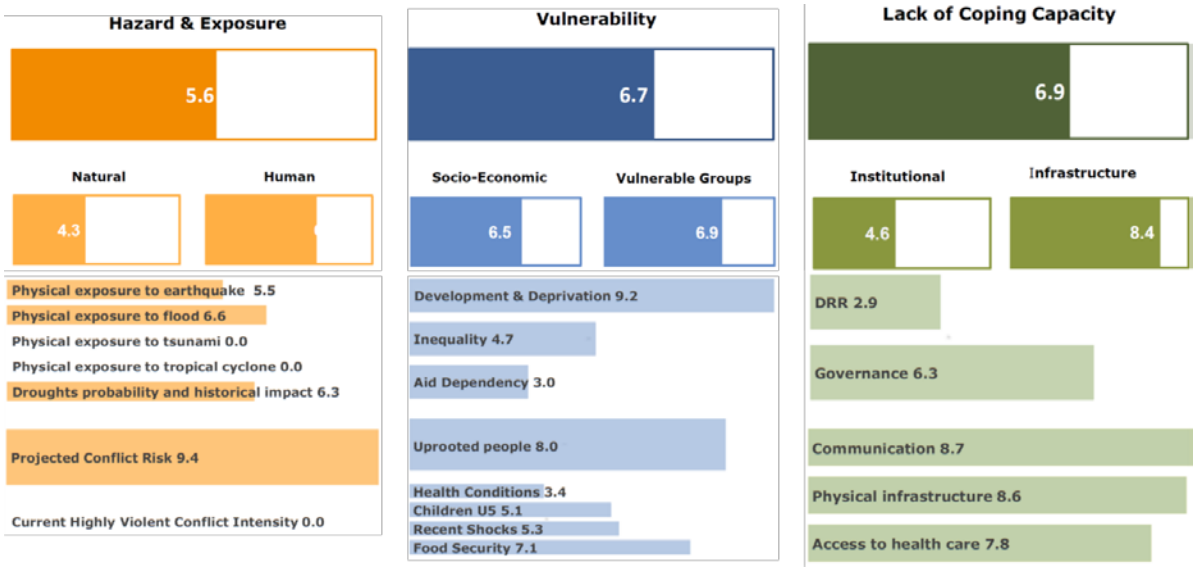


Figure 2. Hazard and exposure, vulnerability and coping capacity of Ethiopia

The Government of Ethiopia (GoE) created the National Disaster Risk Management Commission (NDRMC)[3] under the Prime Minister's Office by transforming the Disaster Risk Management and Food Security Sector (DRMFSS) as a full-fledged Commission. This has significantly strengthened its legal and operational framework for a comprehensive and integrated National DRM system at national and local levels. The NDRMC is expected to ensure a more streamlined Disaster Risk Management, and Early Warning and Response system across all Government sectors, at the federal, regional, Woreda, Kebele, and city levels. This would be achieved by broadening its scope to encompass the urban and industrial

[2] INFORM is a global, open-source risk assessment for humanitarian crises and disasters. It can support decisions about prevention, preparedness and response. The details can be found at http://www.inform-index.org.

[3] By Council of Ministers Regulation No. 363/2015, 14th December 2015, FDR of Ethiopia

sectors, and to widening its approach that focuses on preventive and ex-ante aspects of disaster risk management. In addition to the regular ex post recovery and response functions of DRM, the entire process will remain in line with its National Policy and Strategy on Disaster Risk Management, which was adopted in 2013. The NDRMC reports its DRM related activities and issues to the Disaster Prevention and Preparedness Commission (DPPC), chaired by the Prime Minister under the Proclamation No-10/1995.

As part of its long-term program of establishing a robust Disaster Risk Management (DRM) system in the country, the Disaster Risk and Management Strategic Program and Investment Framework (DRM-SPIF) was developed and ratified in 2014, which aims at making a paradigm shift from response and recovery to a multi-sectoral and comprehensive approach that focuses on disaster prevention, mitigation and preparedness. The DRM-SPIF underscores the importance of an enabling environment for the implementation of DRM through extensive capacity building, coordination, and international collaborations and engagements programs. One of the expected outputs of the DRM-SPIF is to design national DRM programs and action plans.

The key focus of NDRMC through its Directorates and offices at regional and woreda level is to roll out training and capacity building for government with disaster and climate risk function as part of their job. In addition, the NDRMC is also undertaking Woreda Disaster Risk Profile (WDRP) for more than 338 Woredas, and developing DRM Contingency Plan for more than 80 Woredas. These two important processes are expected to guide mainstreaming DRM into development program and provide baseline information for future monitoring and evaluation. The DRM-SPIF envisions a future, where, disaster risk is prevented, mitigated, and forecasted to enable effective response at all levels.

The NDRMC, through support of development partners, is keen to developing capacities at all administrative and developmental levels (federal, regional, Woreda, Kebele and city levels) for streamlined DRM across all government sectors. In response to this need, the World Bank developed a Terms of Reference (TOR) with the objective of strengthening the capacity of the NDRMC to plan and implement essential milestones of the DRM-SPIF to reduce disaster risks and the impacts of disasters through the establishment of a comprehensive and integrated DRM system. Under the TOR, one of the key activities is to conduct a quick capacity and needs assessment of NDRMC in view of its new mandates and functions.

1.2 DRM System and Structures

The NDRMC is responsible for coordinating disaster response, risk management, preventive measures and recovery programmes in the country. The Commission functions through a well-established structure (Figure 2), and duties and responsibilities are clearly listed in the council of Misters regulation no. 363/2015. Overall, the NDRMC has a vision of reducing

disaster risks and potential damages caused by a disaster through establishing a comprehensive and coordinated DRM system in the context of sustainable development.

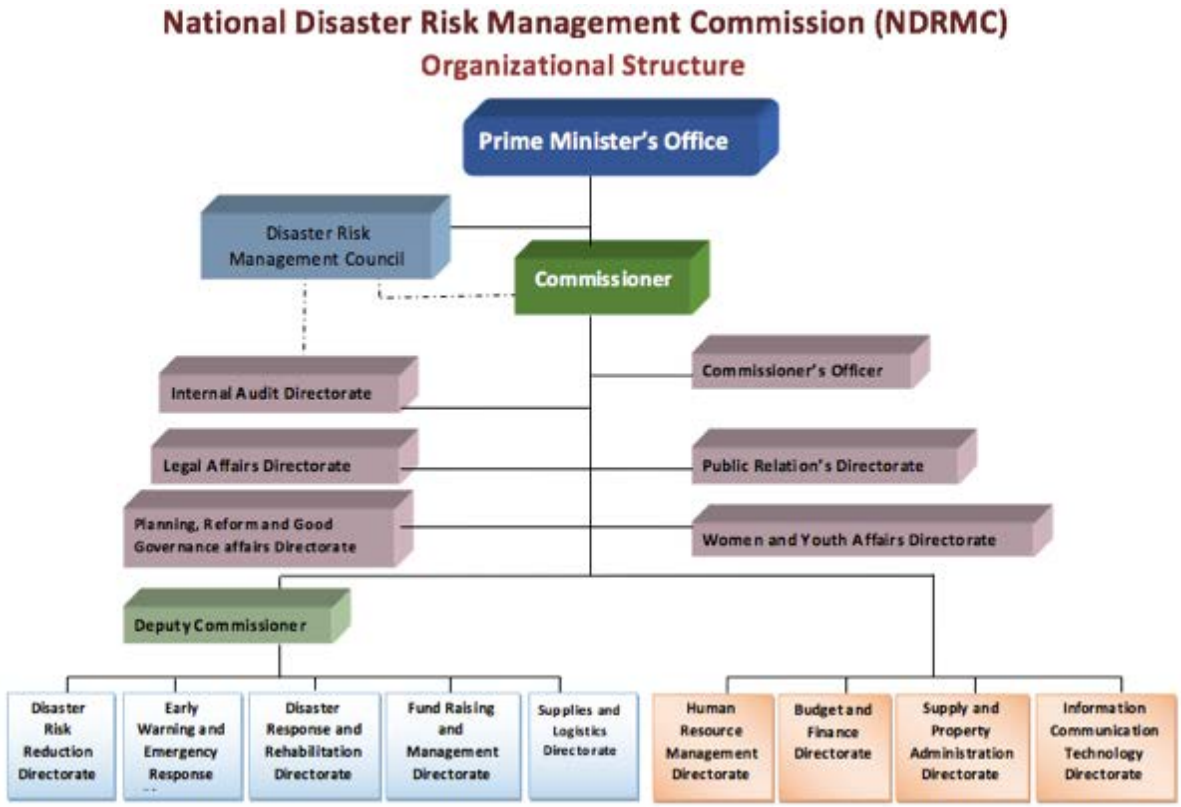


Figure 3. NDRMC – Organizational structure

The ***Core Issues*** of NDRMC are defined in its statute to perform the following duties and responsibilities:

i) Ensure that DRM **is mainstreamed into Government development policies, strategies, development plans and programs**, and in the plans of the private sector as well as in the school curricula; and provide support, as may be necessary, to concerned bodies in relation to such issues;

ii) Ensure and follow-up the **inclusion of DRM in the plan of the executive organs, which are identified as lead sector institutions** in the Disaster Risk Management Policy and Strategy document;

iii) Collect and compile nationwide **action plans for the implementation of DRM policy and strategy**; regularly monitor and evaluate implementation of the same, and submit at least bi-annual performance reports to the Disaster Risk Management Council;

iv) Coordinate, **follow up and evaluate disaster risk reduction, disaster response and rehabilitation programs** of disaster victims;

v) Implement, **lead and coordinate responses in the event of disasters** that either do not fall under the responsibility of any one of designated lead sector institutions or a sudden disaster that is beyond the capacity of the lead sector institution;

vi) Hold and administer **disaster response fund, relief food and non- food stock**;

vii) Whenever necessary, emergency relief food supplies, **distribute up on discharging from concerned government institution** in charge of administration of the strategic food reserve;
viii) In collaboration with concerned bodies, **lead and coordinate work on the development and revision of disaster risk profiles** at the national level;
ix) On the basis of the disaster risk profile, **develop and implement comprehensive contingency plans at all levels**; facilitate conditions to undertake regular and planned simulation exercises at all levels to assess existing emergency response preparedness, including the contingency plan, and take corrective measures accordingly;
x) lead and coordinate **studies and assessments conducted at national level before, during, and after the disaster** period including disaster risk forecaster;
xi) Lead and **coordinate the Federal Early Warning and Emergency Coordination Centre by supporting it with modern technologies; support the establishment of similar centre in lead sector institutions** at Federal, Regional, Zonal and Woreda Administration levels, as required;
xii) Facilitate conditions and **provide support for wider application of information and communication technologies for disaster risk management**; serve as a repository for disaster risk management information at National level and provide support, as required, to enable the Regional Administrations to set up a similar repository;
xiii) Following the **official declaration of a disaster and upon the decision of the Disaster Risk Management Council**, mobilize resources from domestic and international sources;
xiv) Utilize **secured resources by itself and through other concerned lead sector institutions** found at Federal and Regional Administrations levels for emergency response;
xv) In collaboration with concerned bodies, **establish and operate a mechanism to enable the disaster risk management system to get comprehensive support from volunteers** organized on a voluntary basis and engaged in result oriented disaster risk management activities;
xvi) In accordance with the relevant laws and directives of country, **establish working relationship and collaborate with relevant international organizations, governmental and private organizations to facilitate** the smooth implementation of the National Disaster Risk Management Policy and Strategy;
xvii) Own property, **enter into contracts, sue and be sued in its own name**; and xviii) Perform other **related necessary activities to meet its objectives**.

A National Policy and Strategy on Disaster Risk Management has been developed on 2014 which includes general directions and major implementation strategies for Ethiopia. The objectives of the National Policy and Strategy on DRM is to: “Reduce disaster risks and potential damage caused by a disaster through establishing a comprehensive and coordinated disaster risk management system in the context of sustainable development.” This policy is composed of the following directions and strategies :

- Comprehensive disaster risk management systems
- Early warning and disaster assessment information informed response

- Official disaster declaration system
- Decentralized disaster risk management system
- Mainstreaming of disaster risk management into sectoral institutions
- Source of resources and resource mobilization procedures
- Information management and communication systems
- International cooperation
- Implementation capacity
- Cross cutting issues: DRM to give special attention to the following
    - o women, children, elderly, persons with disabilities,
    - o people living with HIV/AIDS.
    - o Social and environmental issues

The DRM Policy & Strategy and DRM-SPIF have given NDRMC the authority and autonomy to bring in multiple stakeholders including various sectoral ministries, donors, UN agencies, and various civil society organizations through formation of various structures to address sectoral interventions. The structure is in place (Figure 3) for addressing various disaster management aspects in holistic manners by facilitating convergence between disaster response and long-term resilience building.

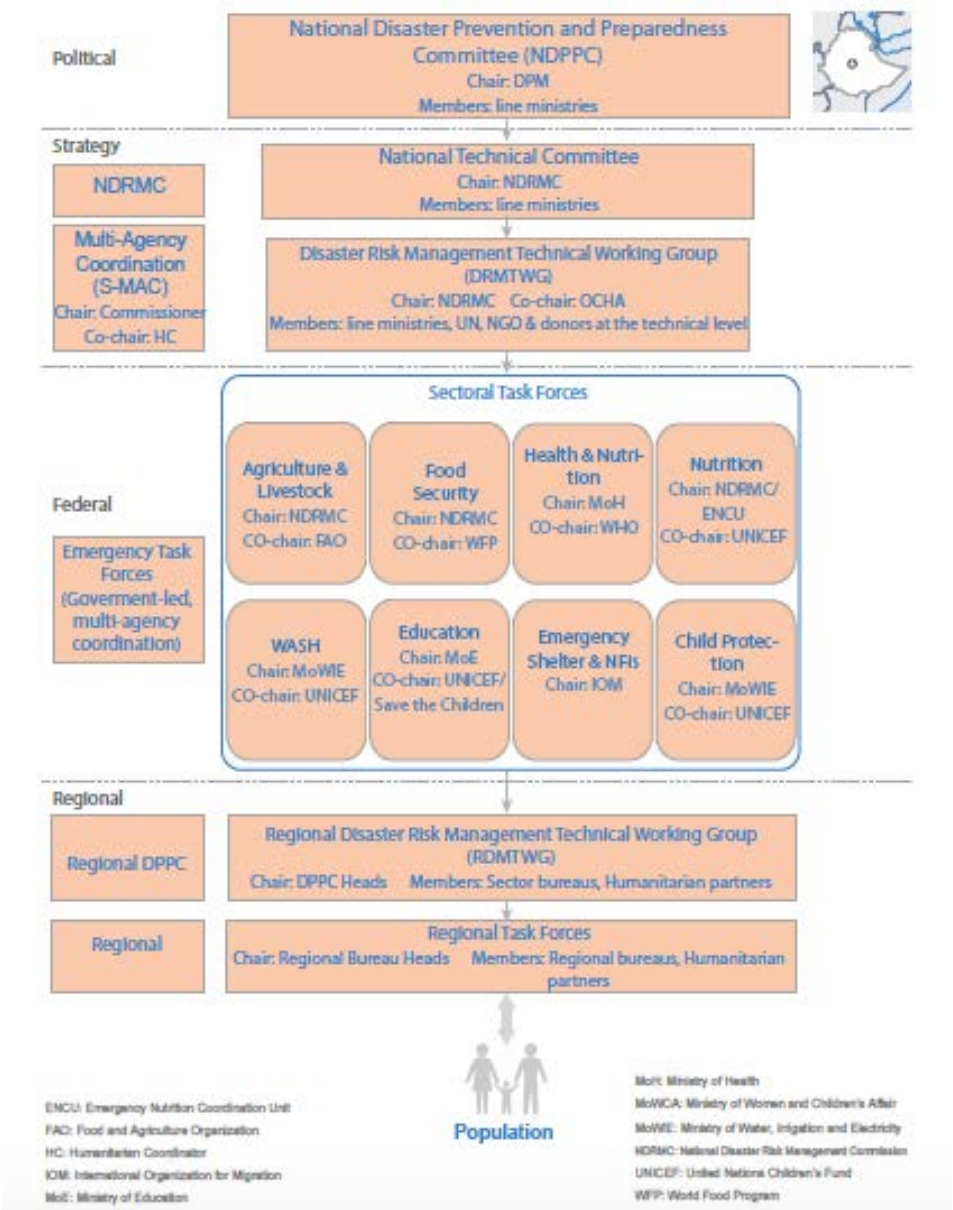


Figure 4. Government Coordination Structure in Ethiopia

The Disaster Risk Management Technical Working Group (DRMTWG), co-chaired by the NDRMC, is primarily responsible for coordinating DRM strategic programme in the country. It also supports the implementation of the new multi-sectoral and multi-hazards DRM approach in Ethiopia, besides providing platform for the mutual engagement and support of humanitarian organizations and development partners. The DRMTWG continues to work as the nodal coordination forum on all DRM phases – pre-disaster (prevention, mitigation and preparedness), during disaster (response) and post-disaster (recovery and rehabilitation). The DRMTWG is supported by a set of technical and sector Task Forces. These Task Forces are primarily responsible for the coordination and actions under each sector and are headed by respective relevant government line ministries. They are supported by organisations from other line ministries, UN agencies and civil society organisations. Cross-cutting to all these is the Working Group on Mainstreaming Gender in DRM that will work with DRMTWG and all

other sector Task Forces to mainstream discussions on vulnerabilities associated with gender and other socially vulnerable groups.

1.4 Mainstreaming DRM into Development

Disasters have often been seen in the context of response and not as an integral part of development. For this particular reason, the relationship between disasters and social and economic development was largely ignored. A conventional development planning paradigm would almost always overlook the value of assessing and analyzing development programs in the context of disasters by not looking into a fundamental question: how the development intervention would help reduce people's exposure to risk and how the investment itself would withstand potential future disasters.

Development has the potential to create new forms of vulnerability, and exacerbate existing ones, resulting in the hampering of efforts to reduce poverty and promote positive development growth. It is essential that the process of development planning is able to identify and analyze the underlying causes of risk and its potential impacts, as well as understanding how to develop measures to reduce potential risk.

One way of protecting development gains, and reducing disaster risk is to mainstream disaster risk management (DRM) into the development planning - from public policymaking to socioeconomic and physical planning (at all levels and across all sectors), including the allocation of public resources and implementation of all development projects in hazard prone locations.

In order to ensure that DRM becomes a fundamental feature of development decision-making, it is essential that the planning process of different government agencies (such as ministries, departments, and development organizations) take risk reduction into consideration. This requires the appreciation of the relevance of DRM to sustainable development and having in place the appropriate policies, strategies and institutional commitments to take action. It is essential that there are available tools to assess the risks faced by each of the development sectors, and understanding how to develop measures and strategies towards risk reduction.

Mainstreaming DRM is achieved by creating linkages between the DRM processes and the existing development planning framework. Essential elements include: (1) accessible, understandable and recent risk information; (2) assessment of the costs and benefits of potential actions; and (3) development of appropriate risk treatment measures.

Need for Mainstreaming DRM into Development

Disasters are often seen as a threat to development, but its interaction is much more complex. Disasters and development are fundamentally related. Ill-planned development can lead to disaster, if it starts with faulty planning. However, good planning, at the same time, can help to reduce the risk of disasters. While disasters are destructive, wiping out years of development gains, they can also provide the opportunity to build back better so that further risk of disasters could be avoided and minimized.

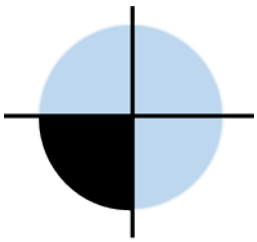
The relationship between Disasters and Development can be best described in Figure 5 below:



Figure 5. Relationship between Disasters and Development (Adapted from UNDP-DMT Programme, 1994)

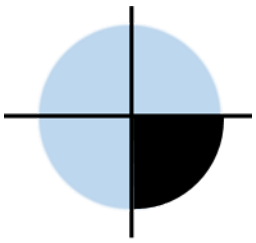
Figure 5 shows the intricate relationship between disasters and development. The field is divided into positive and negative aspects of the disaster and development relationship by the vertical axis. The right half reflects the positive or optimistic side of the relationship and the left side of the diagram deals with the negative aspects of the relationship. The statements in each quadrant sum up the basic concept derived from the overlap of the two realms.

The four themes presented in the figure can be expanded as follows:



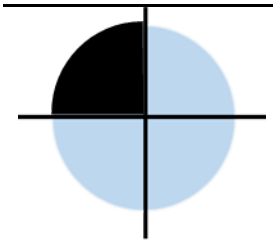
1. **Disasters set back development, and destroying years of development initiatives**

Example: Infrastructure improvement such as transport and utility systems are destroyed by earthquake. Trade, commerce and logistics activities are interrupted by floods.



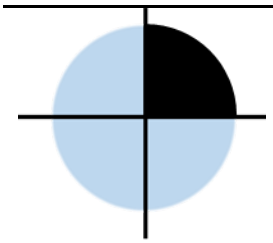
2. **Rebuilding after a disaster provides significant opportunities to initiate development programs**

Example: such as a self-help housing program to rebuild housing destroyed by an earthquake teaches new skills to local builders, strengthens community pride and leadership for community housing reconstruction, and retains development money that would be exported to large construction companies.



3. **Development interventions can increase an area's susceptibility to disasters**

Example: A major increase in livestock development leads to overgrazing, which contributes to desertification, degradation of soil and land resources, increasing vulnerability for crop production, shortage of crop for local consumption and vulnerability to famine.



4. **Development interventions can be designed to increase the resiliency to disasters and reduce their negative consequences**

Example: As part of improving agricultural practices, farmers are taught climate-smart agricultural practices and use drought resistant crops to lessen the impact of droughts in the future.

In order to achieve a more sustainable and risk-resilient development, the goal is to move towards the development quadrants in the positive realm of the diagram. Disaster risk concerns shall not be left unattended by pressing needs of development.

This four-way complex relationship of disasters and development proves that the achievement of sustainable development should not remain isolated or independent from the goals of reducing risks or preventing disasters. The integration of disaster risk reduction into development is crucial to ensure that development supports risk reduction and prevents the creation of new risks. At the same time, integrating DRR considerations into the development will also ensure that development gains are optimized and protected from negative effects of hazards.

Why Mainstream Disaster Risk Management into Development?

In the past 10 years, and particularly since the introduction of the HFA in 2005 and the SFDRR 2015-2030, there has been an increasing recognition of the need to mainstream DRM into development. That is, *'to consider and address risks emanating from natural hazards in medium-term strategic frameworks and institutional structures, in country and sectoral strategies and policies and in the design of individual projects in hazard-prone countries'* (Benson & Twigg, 2004).

Mainstreaming DRM into development means significantly expanding and enhancing DRM so that it becomes a normal practice, and fully institutionalized within the national, sector and local development agenda of nations at risk from natural hazards (Trobe & Davies, 2005).

"Mainstreaming risk reduction should result in appropriate measures being taken to reduce disaster risk and ensure that development plans and programs do not create new forms of vulnerability" (ProVention Consortium, 2009).

Box 1: Disaster risk and development trend

As the new global economy facilitated the dominance of certain regions, cities, and groups in the world economy, it also fostered the marginalization of others (Gencer, 2013). The poverty and inequality created by this polarized new world order and economy is expected to have changed or increased vulnerability from natural disasters (Gencer, 2013). At the same time, dominance and increase of wealth in certain regions and cities are expected to have increased hazard exposure (Gencer, 2013). More assets and more expensive assets may be built in hazard prone areas. As competition increases, large flows of investment may continue to stream into hazard-exposed areas, leading to further increases in intensive risk (UNISDR, 2015a).

(Source: Globalized Economic Development. <http://www.preventionweb.net/risk/globalized-economic-development>)

In development, 'mainstreaming' refers to one strategy for dealing with any kind of cross-cutting issue. It is a technique for normalizing DRM, a cross-cutting issue, as an integral part of development activities. Mainstreaming is not the end itself, but rather a cyclical process that can be continually used to further normalize one process as part of another.

Trobe & Davies (2005) outlines three key purposes of mainstreaming DRM:

1. To make certain that all national, sector and local development programs and projects are designed with evident consideration for potential disaster risk and to resist hazard impact.
2. To make certain that all national, sector and local development programs and projects do not inadvertently increase vulnerability to disaster in all sectors: technical, social, financial, economic and environmental.
3. To make certain that all national, sector and local development programs and projects are designed to contribute to developmental aims and to reduce future disaster risk.

Mainstreaming DRM into development aims to significantly reduce disaster risk by reducing causal factors of risk that are formed and driven by development interventions and practices. By achieving this, development gains will be protected, and public investment, development schemes, programs, and projects will yield optimal benefits to the country.

Mainstreaming DRM into development will also ensure that certain development interventions will not create new forms of risk or intensify vulnerability of certain populations. However, if it does so, mainstreaming DRM into development offers a proactive approach to minimize the risk by putting in place sufficient and effective DRM options as integral elements of development planning and implementation.

Expected Outcomes of Mainstreaming DRM into Development

The effective integration of DRM into the development process results in risk-sensitive development, which has two fundamental outcomes:

- First, ***DRM integration gradually leads to the protection of all existing and new public assets against the impacts of hazard events.*** Over time, awareness of potential hazard impacts leads to investments in the protection of existing assets. Similarly, protective features gradually become part of the normal investment in any new asset. The aim, for example, is that all highways and schools can withstand the adverse effects of natural hazards to a reasonable degree.
- Second, ***integrating DRM seeks to avoid the creation of new forms of risk due to an increase in the exposure or vulnerability of populations and assets.*** This means, for example, that socio-economic policies will not increase the exposure of populations or assets, like an agricultural policy that encourages farming settlements in an inadequately protected flood plain. It also means that all new physical developments, like rail lines and housing developments, are undertaken with consideration not only of the potential hazard impacts on the asset itself, but also of the potential impacts on the surrounding area. As such, these developments do not exacerbate existing risks or create new ones for nearby communities or assets.

1.5 UNDERSTANDING DISASTER RISK

Disaster risk is defined as the "potential disaster losses in lives, health status, livelihoods, assets, and services, which could occur to a particular community or society over some specified future time period" (UNISDR, 2009).

If we know the degree of vulnerability that a community has, its level of exposure, including the type and nature of the hazard to which the community is exposed, we can gain a good idea of the amount of loss that the community is likely to suffer if there is a hazard event (such as an earthquake or flood etc.). The amount of loss, when calculated in advance, is the risk. In this way, when considering disaster risk, using the conditions and components of a disaster, which we have earlier examined, we can understand disaster risk as:

$$Disaster\ Risk = \frac{Hazard\ x\ Exposure\ x\ Vulnerability}{Capacity}$$

Or as…



Disaster risk could be reduced if hazard, exposure, and vulnerability are reduced, and capacity is increased. Moving people away from earthquake-prone areas will reduce their exposure – e.g. reducing the interactions between seismic activities and people and their assets, and hence earthquake risk shall be reduced. However, in the scenario where no area is available for resettlement or if the majority of the country is in seismic zone, reducing vulnerability will be the option. Reducing vulnerability includes actions such as increasing the access and lowering the price of drought resistant crops and increasing the promotion and practice of climate-smart agriculture, or developing alternative livelihoods sources for high vulnerable areas.

Reducing the hazard is beyond human control under the scenario of geophysical hazards. However, in the case of floods, human interventions to reduce flood hazard is possible. For

example: building dams, reservoirs or catchments in the upstream could reduce flood inundation downstream.

Capacity building will also help reduce the risk. This may include capacity of the people to cope with hazard situation, to take precautionary measures and preparedness actions and to respond in a timely and effective manner.

Disaster risk needs to be assessed in order to identify and assess the hazards, exposed elements, vulnerability and capacity, as well as determining the likelihood and extent of negative consequences that are likely to occur when these element interact. Risk assessment, hence, is a crucial step to evaluate and prioritize the risk before selecting the effective options for risk treatment.

Disaster Risk Reduction

ISDR (2009) defines disaster risk reduction (DRR) as:

> *Disaster risk reduction is aimed at preventing new and reducing existing disaster risk and managing residual risk, all of which contribute to strengthening resilience and therefore to the achievement of sustainable development.*

ISDR also discusses that:

> *Disaster risk reduction is the policy objective of disaster risk management, and its goals and objectives are defined in disaster risk reduction strategies and plans.*

The DRR Process

There are two major components of the DRR process: (1) Risk assessment (to access the extent and frequency of disaster risk and negative consequences to people, certain segments of population, built environment and systems), and (2) Risk treatment or risk management (option or combination of options or measures to reduce the risk and manage negative impacts of hazards). Encompassing these two components of DRR is the process of establishing context in which DRR is being undertaken, consultation and communication with stakeholders, and monitoring and



Figure 6: The Disaster Risk Reduction Components and Process (Adapted from Qualitative Risk Management Process from ISO/IEC 27005:2008)

review, which are implemented in every step of the whole process. Figure 3 presents key components and process of DRR.

Understanding Disaster Risk Management

As defined by UNISDR (2009), Disaster Risk Management is:

> *The application of disaster risk reduction policies and strategies to prevent new disaster risk, reduce existing disaster risk and manage residual risk, contributing to the strengthening of resilience and reduction of disaster losses.*

The Disaster Risk Management Cycle



Figure 7. Disaster risk management cycle (Adopted by WHO/AFRO)

According to the African Health Observatory and the World Health Organization, disaster management is a continuous process with different but complementary interventions in the different phases of the cycle. The magnitude of a given intervention may vary from one phase to the other. However, all interventions contribute to managing the effects of a disaster. The continuous monitoring and evaluation of the DRM interventions should be mandatory to improve or strengthen disaster management skills using lessons and best practices from the previous disaster.

PART 2: PROCESS OF DRM MAINSTREAMING

2.1. CONCEPTUAL FRAMEWORK

The development planning process provides the backdrop for mainstreaming DRM. The development planning process covers planning, investment programming, budgeting, implementation, monitoring and evaluation. Mainstreaming DRM is essentially to integrate disaster (including climate) risk consideration- that is to embed DRM process into each stage of development planning practices where relevant.

By doing so, DRM will become essential part of usual practice to formulate development policies and strategy, long, medium and annual planning, designing/implementing/ monitoring and evaluating programs/projects in the context of disasters. This will take the two fundamental points of view:

- Whether the development interventions (policies, plans, programmes, projects, development goals) are affected by disaster, if so what are doable and effective DRR measures to avoid or minimize the impacts, and better management of impacts?
- Whether development interventions increase either the likelihood of a disaster or increase the potential damaging effects of a disaster (exposure and vulnerability to hazard increased), if so what are the doable and effective measures to ensure exposure and vulnerability will be avoided or limited?

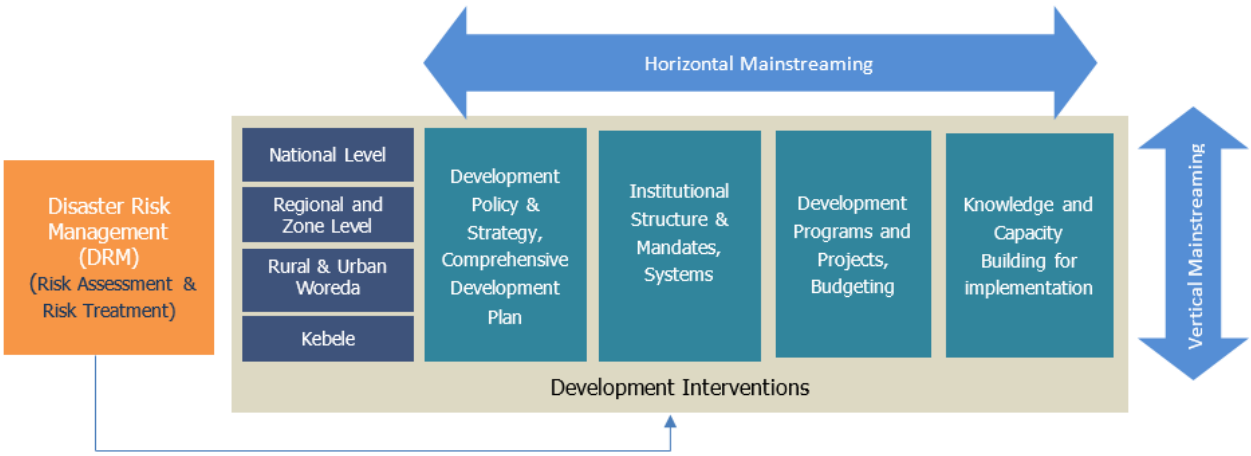


Figure 8. Conceptual Framework for Mainstreaming DRR into Development (Adapted from ADPC, 2014)

Managing Development: The Process

Development frameworks are complex and multi-faceted, encompassing a range of processes and tools that make up development as a whole. Development is not a linear process; it is achieved through a range of interlocking and overlapping cyclical processes. A solid framework for mainstreaming will seek to integrate DRR into each area of the development framework.

The development framework can be split into four areas: policymaking, planning, budgeting and implementation. Policymaking and development planning have a medium- to long-term scope: anywhere from 3 to 30 years. Budgeting and project implementation, on the other hand, have much shorter recurrence periods, often occurring annually, or in some countries, multi-annually.

Within each of these areas, there are a number of different kinds of tools and instruments that may be utilized. Each tool typically follows a particular procedure for its development and implementation.

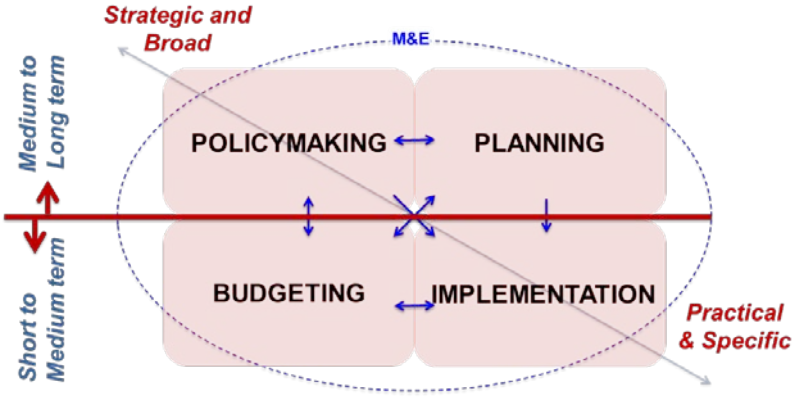


Figure 9. Development Framework Process

Development is not a linear process – it is achieved through a range of interlocking and overlapping cyclical processes development framework can be loosely broken down into four areas: policy-making, planning, budgeting and implementation. Policy and development planning has a medium to long-term scope, while budgeting and project implementation has a shorter recurrence period, often occurring annually or multi-annually.

There are layers of government-led processes with no particular starting point. A solid framework for mainstreaming will look to integrate DRR into each area of the development framework. Within these areas, there a number of different kinds of tools and instruments that can be utilized. Each tool typically follows a particular procedure for its development and implementation. Examples of these tools are policies and legislations, comprehensive development plans, spatial plans, development strategy documents, national action plans, etc.

Towards a Common Understanding on Mainstreaming DRM into Development

It is recognized that *there is no blueprint for successful integration of disaster risk management and reduction into development.* Each country needs to identify the current and future risk from natural hazards, prioritize the risk and take actions to reduce it. However, it is possible to have a common understanding of the broad development framework followed in most of the countries in the region and how disaster risk reduction can be factored into that framework.

Once the entry points for mainstreaming DRR are identified at different levels and across sectors, actions are to be taken. Subsequently for each action a certain set of skills are required as well as corresponding capacity to be developed.

2.2 Overview of Development Planning in Ethiopia

Planning Process

The government of Ethiopia has a planned approach to development since 1952/53, when the National Economic Council (as administrative machinery) was established in 1955 for formulating plans. The Council consisted of a Planning Board and a Secretariat to the Board, specifically charged with the task of drawing up plans. Ethiopia's First Five Year Development Plan (1957-61) and its Second Five Year Plan (1962-67) were prepared under this arrangement.

The new institutional framework, the New National planning council and National Planning Commission established by the Council of Ministers Regulation number by 281/2013. The National Planning Commission is accountable to the Prime Minister who is a chairperson of the National Planning Council in Ethiopia. The council consists of following members: Prime minister (as chairperson), cabinet ministers (as member), Chief Executives of Regional States (as member), Deputy Chief Executives of Regional States (as member), Governor of the National Bank of Ethiopia (as member), and other organs to be designated by the prime minister (as member). The National Planning Commission Council has following power and duties: i) Set overall long term perspective and five years' medium term growth targets; ii) Provide general guidance for planning and development priorities; iii) Approve the plan; and iv) Review the periodic evaluation results.

The National Planning Commission is accountable to the Council and has the following power and duties:

1. Serve as the Secretariat of the Council and provide support as needed;
2. Preparation of Long Term Perspective and Medium term development plan and strategies;
3. Research and Development;
4. Monitoring and Evaluation; and
5. Consulting and Capacity Building.

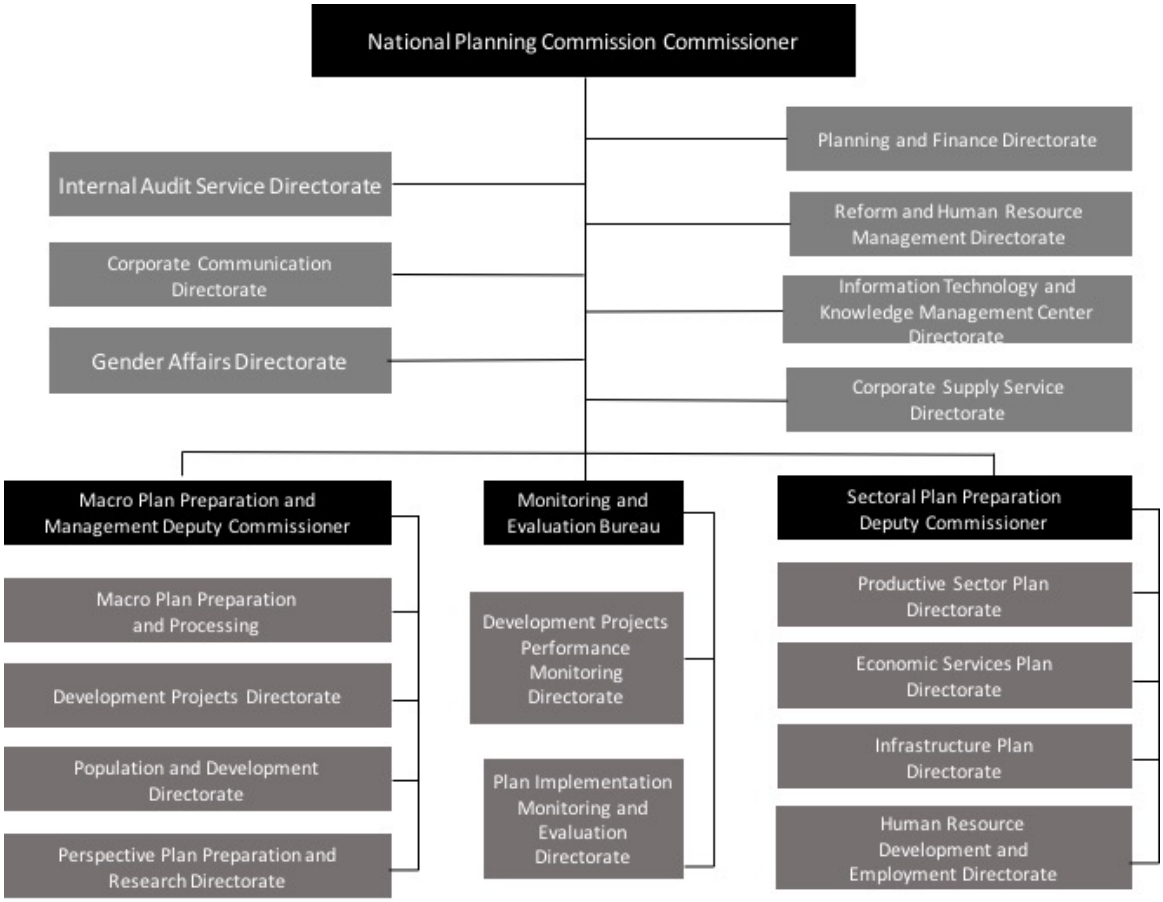


Figure 10. Organizational structure of the national planning commission in Ethiopia

Preparation of National Development Plans & Institution

While preparing national development plan, following steps are often followed:

- The Constitution of the Federal Democratic Republic of Ethiopia provides power to the Federal Government to formulate and implement national policies, strategies and plans in respect to overall economic, social and development matters.
- Accordingly, the Federal Government is responsible to design and implement vertically coherent and horizontally consistent National Development Plans, which are based on national development needs and priorities.
- National Development Plan in Ethiopia is internally driven with strong sense of full ownership and political commitment of the Government
- To enhance the sectoral integration, Ethiopia is established four Clusters under the prime Minister Office: i) Macro Economy Cluster, ii) Finance and Economy Cluster, iii) Good Governance and Civil Service Reform Cluster and iv) Social issues cluster

Key institutions and stakeholders

In the national development plan preparation process, following clusters, institution and Council have major roles:

- National Macro Economy Cluster
    - NPC, MoFEC, National Bank and Customs' and Revenue Authority are the major members of this cluster

    - Develop Macroeconomic framework based on the government priority, Policy, country vision development priority, global and regional agreement, trends etc.
    - Provide General Guidelines and direction

- National Planning Commission
    - Formulate Macro economic targets and framework
    - Provide Generic Guideline for each Clusters
    - Provide technical support to Clusters
    - Ensure the global and regional agenda mainstreaming process
    - Prepare draft National Plan
    - Consultation and discussion with the draft plan
    - Preparation and submission of the final National Plan to the Council and the House of People Representative (HoPR)

- Finance and Economy Cluster, Good Governance and Civil Service Reform Cluster and Social issues cluster
    - Each Clusters Coordinate and Prepare their line Ministries plan based Generic guideline, Macroeconomic framework in transparent and integrated manner.
    - Mainstream global and regional goals in their plan
    - Submit the Cluster Plan to NPC

- Council of Ministry/National Planning Council
    - Approve and ensure the plan
    - Provide direction and recommendation

- House of People Representative (HoPR)
    - Ratified development Plan document
    - Making it a binding legal development plan document for the next five Years

2.3 Entry Points for DRM Mainstreaming

Entry points for DRM integration into development process must be identified based on risk information and risk reduction priorities of a country. Identifying entry points begin with a thorough understanding of development planning and implementation process and the areas in which DRM process is to be incorporated hence insuring that such development process is risk informed. The following are a few indicative entry points:

- **Integrating disaster risk assessment in the project development cycle** - The project planning, design and implementation cycle presents a key entry point for linking risk assessment with development. Therefore, it is necessary to fit risk assessment into the process of generating development projects. Information from the problem identification stage of disaster risk assessment provides input into the preliminary mission phase of the project cycle when the study to be undertaken to formulate development projects is designed. The risk identification and determination stage of risk assessment is linked to the development diagnosis phase of development planning when project options are identified and to the project formulation phase.

Stage in risk assessment process	*Phase in project development cycle*
Problem identification	Preliminary project development mission: • Collection of basic information on the project area, including natural hazards • Preparing work plan, including hazard work to be done
Hazard assessment	Development diagnosis • Natural hazard evaluation • Identification of key issues • Collection of vulnerability and risk information • Generation of development strategies
Vulnerability and risk assessment; decision-making	Project formulation: • Formulation of development strategies • Production of hazard maps • Preparation of vulnerability and risk studies • Selection of best project options • Preparation of investment packages

Figure 11. Linkages between risk assessment stages and project development cycle phases (Source: Organization of American States, 1990)

Integrating disaster risk assessment in development sectors - Development takes place within the context of specific sectors but disaster risk management is not a stand-alone sector or programme. It is a mechanism to address multi-faceted issues that constitute vulnerability. Thus, disaster risk management is a multi-sectoral and inter-institutional process. And mainstreaming disaster risk assessment in development therefore involves considering three generic issues:

- how the activities of the sector impact disaster risks;
- how to apply risk assessment in planning the sector's development;
- any sector-specific considerations in mainstreaming disaster risk assessment in development strategies and programmes.

There are a number of planning tools that could be adopted for Disaster Risk Management and Risk Reduction inclusive land use planning as follows:

Planning Tools	Example
Regulatory Measures	***Land Use Planning and Zoning*** to impose specifications and restriction on land use activities permitted, permitted with condition or banned in the area. Based on the survey of existing land use types and the socio-economic development plan, land use will be regulated through the establishment of appropriate zoning (e.g. residential zone, commercial zone, industrial zone, agriculture zone, open space, green zone, mixed use, no development zone in hazard prone area and urban reserve in risk prone area) to • Determine land sue, density control, building placement and servicing standards • Designation of land as hazard prone, such as identification of a floodplain and limiting development activities in the hazardous location • Minimum building elevations & setbacks for land in hazard prone areas • Density control
Restriction Tools	***Land Acquisition***- a process where government can gain ownership of land for the primary purpose of addressing public safety through purchase or expropriation such as land acquisition for environmental preservation, or for protection works such as construction of kike, no building zones, or for exclusive use as park or green space) *Conservation Easement*- a legal agreement in which one property owner or leaser grants the use of some real property rights to a public or private entity for a specific purposes.
Engineering Tools	***Property specific design*** is a tool used to protect individual buildings from potential structural impacts such as • Reinforcing building foundations • Structural elevation • Using flood resistant materials and elevation of electrical and mechanical services/equipment above the flood level ***Area wide hard protection*** like dikes prevent inundation of lowland area from riverine flood or high rainfall, hence provide benefits to entire urban area
Natural Protection Tools	**Natural service** could offer various benefits and be used for different purposes including risk reduction. There are several options for conserving and optimizing natural functions of environmental and ecological systems such as • Natural soil nourishment to reduce detrimental effects of erosion by providing sediment to satisfy the natural forces of erosion • Vegetation and planting to increase absorption of rain water and slow down water flow • Wetland and natural ponds/lakes as natural retention basin for water storage

	• Natural windbreaks like tress can withstand high-speed winds from cyclones and other storms. • Urban green space for filtering pollution from air, improving air quality, noise cushioning in built-up area, road traffic and transportation system

Box 2: Risk assessment and developing risk information for urban planning in Dessie Town, Ethiopia

The urban area of Dessie town, one of main urban centers of Ethiopia with 200,000 inhabitants. In this area, landslides heavily interact with a disorderly expanding human settlement, inducing high risk conditions for human lives, buildings, infrastructures and economic activities.

Based on a detailed geological and geomorphological field survey and mapping, a GIS-based analysis of landslide susceptibility has been applied to the Dessie basin, one of the "hanging" tectonic depressions located along the western Afar margin.

Landslide hazard and risk maps were successively produced for the central sector of Dessie town. The landslide risk map and the related report will constitute the starting point for a possible plan of risk mitigation in the urban area of Dessie.

Source: Landslide Hazard and Risk in the Dessie Town Area (Ethiopia), Giandomenico Fubelli, Domenico Guida, Antonello Cestari and Francesco Dramis, 2013.
<*https://www.researchgate.net/publication/289092116_Landslide_Hazard_and_Risk_in_the_Dessie_Town_Area_Ethiopia*>)

PART 3: GUIDELINES FOR MAINSTREAMING DRM INTO POLICY AND PROGRAMMES

3.1 KEY POLICIES AND PROGRAMMES

National DRM Policies and Programmes

Disaster Risk Management: Strategic Programme and Investment Framework, 2015 (DRM-SPIF) of the Disaster Risk Management and Food Security Sector, Ministry of Agriculture.

The executive summary of the policy indicated the intrinsic linkage of DRM as part of country's effort to towards achieving broader socio-economic development aspiration of the country. 'DRM Ethiopia unveiled the Growth and Transformational Plan (GTP) which sets the vision for the country as a middle income, democratic and developmental state and a carbon neutral climate resilient economy by 2025. As aggressive goals of broad based economic growth and social development are envisioned for the country in the coming five years, **a comprehensive Disaster Risk Management (DRM) system is called for to reduce disaster risk and the impacts of disasters, and to protect development gains.** *The urgency behind this approach is conveyed by a host of national policy documents such as the GTP, the Agricultural Sector Programme and Investment Framework and the Policy on Disaster Risk Management*…'

The Goal of the SPIF is to contribute to Ethiopia's achievement of middle income status by 2020, with the Specific Objectives as follow:

- Reduce disaster risks and vulnerability that hinder development, primarily by focusing on proactive measures, establishing a culture of risk reduction in regular development programmes, and addressing the underlying causes of recurrent disasters;
- Save lives and protect livelihoods in the event of disasters and ensure the recovery and rehabilitation of all disaster-affected populations;
- Promote the resilience of people vulnerable to disasters;
- Mainstream DRM into all sectors, and ensure DRM is integrated into regular development programmes and implemented at all levels.

Linkages to Other Polices and Strategies:

- PASDEP (2005 -2009) and GTP (2010 – 2015)
- The Agriculture Sector Policy and Investment Framework (PIF)
- Climate Resilient Green Economy (CRGE)
- Social Protection Policy (2012)
- Productive Safety Net Programme (PSNP)

In other policies and strategies, the government of Ethiopia has pointed out the need to concentrate on reducing, in the long and medium term, vulnerability of regions' to drought and other natural calamities:

- The Food Security Strategy (FSS), which emphasizes the need and plans activities to strengthen emergency response capabilities of the government, such as the early warning system and the quality of relief distribution;
- The Intergovernmental Authority on Development (IGAD) has worked with the Government of Ethiopia to draft a Country Programming Paper (CPP) entitled "To End Drought Emergencies in the Horn of Africa". With a focus on pastoralists, it references the DRM policy in the component on Pastoral Disaster Risk Management.
- The National Women's Policy and National Action Plan for Gender Equality also form the basis for mainstreaming gender in DRM.

National Policy and Strategy on Disaster Risk Management, 2013

The main objective of the Policy is to reduce disaster risks and potential damage caused by a disaster through establishing a comprehensive and coordinated disaster risk management system in the context of sustainable development, with Specific Objectives as follow:

- To reduce and eventually prevent disaster risk and vulnerability that pose challenges to development through enhancing the culture of integrating disaster risk reduction into development plans and programmes as well as by focusing on and implementing activities to be carried out before, during, and after the disaster period to address underlying factors of recurrent disasters.
- In times of disasters, to save lives, protect livelihoods, and ensure all disaster affected population are provided with recovery and rehabilitation assistances.
- To reduce dependency on and expectations for relief aid by bringing attitudinal change and building resilience of vulnerable people.
- To ensure that disaster risk management is mainstreamed into development plans and programs across all sectoral institutions and implemented at all levels.

Policy direction and strategies including Mainstreaming Disaster Risk Management into Sectoral Institutions

Effective Disaster Risk Management System can only be achieved if disaster risk management is mainstreamed into every sectoral development plan. Disaster risk management is a cross cutting issue and the responsibility of multiple sectoral institutions and thus concerned bodies must implement it by integrating it into their regular development activities. Looking into the current context of the country, however, attention has not been given to mainstreaming yet and thus it is not being implemented.

Unless disaster risk management is considered as integral to development plans of sectoral institutions, it can be difficult to ensure continued achievements in national development. Therefore, disaster risk management shall be mainstreamed into development plans of government institutions and private sector organizations.

National Development Policies and Programmes: Growth and Transformation Plan

The Government of Ethiopia (GoE) follows a series of integrated five-year development plans, called ***Growth and Transformation Plans (GTP)*** to guide the state-led industrial development.

The National Planning Commission is responsible in formulating the GTP II, through inclusive and participatory process.

The major objective of the GTP II is to serve as a spring board towards realizing the national vision of becoming a low middle-income country by 2025, through sustaining the rapid, broad based and inclusive economic growth, which accelerates economic transformation and the journey towards the country's Renascence. GTPII, covering 2016–2020, sets the overall target to achieve an average growth of 11% in the next five years and lays the ground to attain lower-middle income status by 2025.[4] The plan presents detailed economic sector plans and economic infrastructure sector plans.

The GTP II has set out the following ***specific objectives:***

i) Achieve an annual average real GDP growth rate of 11 percent within a stable macroeconomic environment and thereby contribute towards the realization of Ethiopia's vision of becoming a lower middle income country by 2025, while pursuing comprehensive measures towards narrowing the saving-investment gap and bridging the widening trade deficit.
ii) Develop the domestic engineering and fabrication capacity and improve productivity, quality, and competitiveness of the domestic productive sectors (agriculture and manufacturing industries) to speed up structural transformation;
iii) Further solidify the on-going public mobilization and organized participation to ensure the public become both owners and beneficiaries from development outcomes.
iv) Deepen the hegemony of developmental political economy by strengthening a stable democratic developmental state.

In order to achieve the objectives set, the ***Pillar Strategies*** of the GTP II will be followed:

i) Sustain the rapid, broad based and equitable economic growth and development witnessed during the last decade;
ii) Increase the productive capacity and efficiency to reach the economy's production possibility frontier through concurrently improving quality, productivity and competitiveness of productive sectors (agriculture and manufacturing industries);
iii) Speed up and catalyze transformation of the domestic private sector and render them a capable development force;
iv) Build the capacity of the domestic construction industry, bridge critical infrastructure gaps with particular focus on ensuring the quality of infrastructure services through strengthening the implementation capacity of the construction sector;
v) Properly manage and administer the on-going rapid urbanization to unlock its potential for sustaining growth and structural transformation of the economy;

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[4] Ethiopia - Mining Sector and Business Prospects, KE- September, 2016. Accessed from https://photos.state.gov/libraries/ethiopia/956093/PDF%20Files/Ethiopia%20Mining%20Sector%20and%20Business%20Prospect.pdf)

vi) Accelerate human development and technological capacity building and ensure its sustainability;
vii) Establish democratic and developmental good governance through enhancing implementation capacity of the public sector and mobilization of public participation;
viii) Promote women and youth empowerment, ensure their participation in the development process and enable them equitably benefit from the outcomes of development;
ix) Build climate resilient green economy.

3.2 PLANNING PROCESS

The planning process in Ethiopia passes through a series of iterative stages which are:

1. ***Preliminary stage:***
    a. The initial stage where the state, and government consisting of Council of Representatives or Council of Ministers) giver guidelines on the economic, social, and political tasks which serves as the starting point for the planning institution to initiate the planning process.
2. ***Analytical stage***
    a. Evaluation of socio-economic conditions in the country as well as the international economic situation, analysis of the state of the economy at the beginning of the plan period, assessment of the implementation, identify socio-economic issues, development constraints. The analysis will be the basis to develop the goals and objectives of development in the plan. The rates and main proportions of development needed to attain the set objectives are calculated by:
        i. preparing alternative growth scenarios that could bring about the achievement of the specified objectives under various assumptions;
        ii. analyzing the pros and cons for each scenario and selecting the best growth scenarios; and
        iii. integrating the above processes to serve as the marco-framework (guidelines) which contains mainly:
        (1) the analysis of current economic situation;
        (2) overall objectives, goals and strategies;
        (3) GDP and sectoral growth variants;
        (4) investment ceilings (sectoral and global);
        (5) the budget frame; and
        (6) balance of payments projection.
3. ***Adjustment and directive stage***
    a. This stage selects the most appropriate course of development requirements at various levels with the available resources. This stage transmits the plan guidelines to sectoral agencies and regional planning offices with instruction to prepare and submit their own plan proposals according to a specific time schedule
4. ***Plan elaboration stage***
    a. The step involves the process of preparing a draft plan which will be sent to the highest authority. The sectoral plans will then be further elaborated and

submitted to respective corporations to examine and adjust the proposals then re-submit to the respective sectoral ministries.

b. The ministries will adjust, and re-examine the sectoral plan and submit the consolidated plan to the respective sectoral department planning institution.
c. Sectoral departments of the planning office will examine the plan in-terms of efficiency and consistency with the objectives, production, service, and investment targets. This stage would require active interaction with the respective ministries.

5. ***Plan adoption stage***
    a. In this stage, the planning office submits the draft plan to the council of ministers of consideration, and the Council of Ministers will make necessary corrections and adjustments and submit the draft plan to the Council of Representatives for final approval.
6. ***Plan implementation stage***
    a. At this stage, the plan approved by the highest organ of state in the country is distributed by the planning institution to sector ministries, commissions, regions, etc. Upon receiving the approved plan, sector ministries, corporations, regions, enterprises and commissions prepare action plans based on their respective approved plans and start implementing it. This stage also involves follow-up and reporting activities of the implementation phase of the approved plan.

3.3 MAINSTREAMING TOOLS

One of the key tools to aid in the mainstreaming of DRM is Risk Assessments. Conducting risk assessments supports an in-depth understanding of existing, and future disaster risks, which will help in supporting decision-making processes on identifying the best measure to reduce the risk.

Risk Assessment

As DRR focuses on disaster risk, risk assessment has become an essential component of DRR. Risk assessments are undertaken to determine the nature and extent of risk by analyzing potential hazards and evaluating existing conditions of vulnerability and capacity that could pose a potential threat or harm to people, property, livelihoods and the environment on which they depend (UN/ISDR, 2009). Risk assessment generally aims to identify risk, and build specific knowledge and profound understanding of risks within a specific geographical boundary, for particular population or physical assets and their environment over a specific time period.

The outcomes of risk assessment, including risk profile of certain area, and virtual representation of risk such as risk map or risk zoning, shall provide the required risk information that can be used to consider appropriate measures and options for risk treatment.

Basic Process of Risk Assessment

Risk assessment is the process developed for detailed analysis of risk in order to obtain a comprehensive understanding of risk in particular areas or for certain population groups or sectors.

Risk assessment covers the overall technical, economic and social process of Risk Identification, Risk Analysis and Risk Evaluation (ISO 31000, 2009). That is, risk assessments employ and involve an extensive range of multi-disciplinary processes to identify, analyze and evaluate risk, which is a combination of hazard, exposure and vulnerability and the interplay between them.

Based on the fundamental relationships between hazard, exposure and vulnerability as the components of disaster risk assessment, when adopted within the DRR framework, is mostly undertaken with the basic steps presented in the following section:

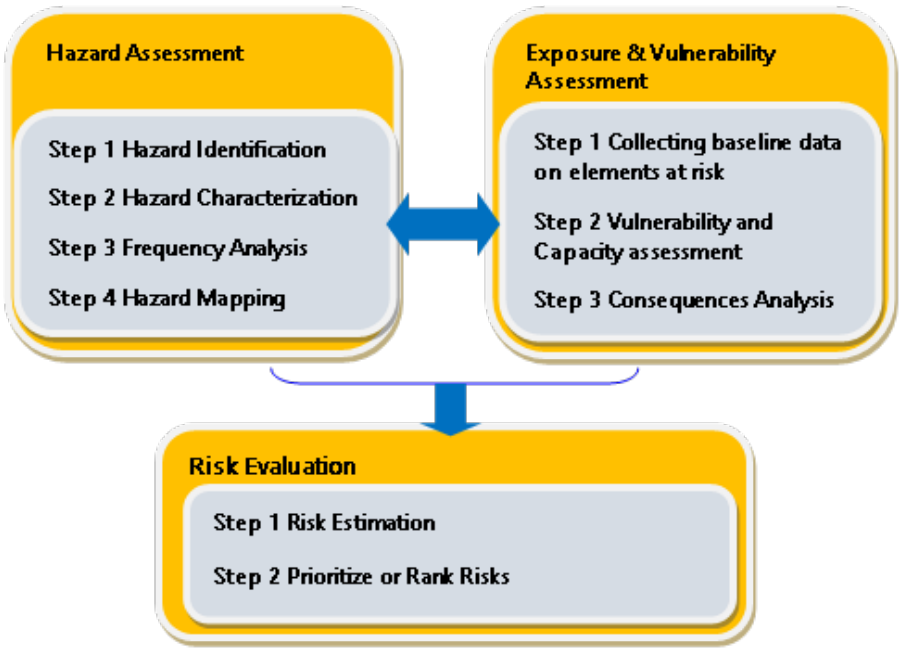


Figure 12. Basic Steps of Risk Assessment

Risk Evaluation

Once the hazard assessment, exposure assessment, vulnerability and capacity assessment, as well as the consequence analysis has been completed, the next step is to evaluate the risk using all the mentioned results.

Risk evaluation is the process of determining the significance of each risk. To conduct a risk evaluation, it is important to undertake risk estimation and prioritizing or ranking risks.

Application of Risk Assessments for Development

The outputs of disaster risk assessment, which includes the risk profile of a particular area or sector and visual representation of risk such as risk maps can be used to enhance various

phases of development, ranging from policy formulation and planning, to development program/project design and implementation. Risk assessments provide a clearer picture of characteristics and extent of the three risk components (e.g. hazard, exposure and vulnerability), especially the underlying vulnerable conditions that might have been overlooked. The various consequences make different impact scenarios obvious, allowing modification of development interventions to better addressed. From there, DRR strategies and measures can be incorporated into development goals, objectives, strategies, programs and projects.

It is important to note that risk is not static and any change in hazard, exposure, vulnerability and capacity could potentially change the level of risk. While the components of risk are changing constantly, regular updating of risk assessment will be required.

Risk Treatment

The final step in the DRR process is Risk Treatment. Based on the outputs from the Hazard Assessment, Vulnerability and Capacity Assessment, Consequence Analysis, and Risk Evaluation, the most appropriate option for risk treatment or management is identified in this step and is recommended for end-users.

Decisions made on how to manage disaster risk should take into account various forces and trends within the social, economic and environmental context. This includes a society's perception of risk, the priority for risk reduction, the existing capacities to manage risk, the willingness from economic sectors to invest in risk management measures, the allocation of budget for the purpose of reducing the risk, the environmental concerns on whether certain risk management measures could have implications on environment services, and many others depending on the context of the area or locality where DRR will be implemented.

Measures for Reducing and Managing Risks

After we have identified the hazards and the level of risk, the next step is to decide how to deal with them. Decisions on identifying risk reduction and risk management measures and strategies can vary depending on different reasons and context where DRM process is carried out.

Some may opt to totally eliminate the risk while others will focus on mitigating the potential impacts of the risks. There are also those who will choose to share or transfer the risk, while some who decide that the risk is insignificant will prefer to accept the risk and do nothing.

For mitigation, a combination of measures could be used to optimize the results including structural, non-structural and ecosystem-based measures. Bearing in mind that the objective of mitigation measures is to minimize the risk, and there will be some negative impacts of the risk that remains untreated. Those who attempted to reduce the risk, will also accept the risks that remains and will put in place what is necessary to cope with remaining risk such as

preparedness and self-insurance. Table XX below shows the common categories of risk management strategies or measures which can be integrated into development plans.

Box 3. Categories of common risk treatment strategies or measures

Avoid Risks (Eliminate/Avoid)	Reduce Risks (Optimize/Mitigate)

• Relocation of settlements away from hazard prone areas
• Prohibiting resettlement and human activities in hazard prone areas
• Imposing regulations to restrict the use of specific land area
	Structural
	• Retrofitting/strengthening physical structures to withstand the impacts of hazards
	  • Building of levees, floodgates, dams, etc.
	  • Construction of safe shelter for harsh weather
	  • Building check dam to slow-down water velocity and reduce flashflood
	Non-structural
	  • Implementation spatial planning and land use zoning
	  • Building codes, building use regulation, construction standard, density control and enforcement
	  • Training and capacity building on coping with disaster impacts
	  • Early warning and monitoring systems
	Ecosystem-based
	• Use green-zone as flood buffer zone
	• Vegetation and deep-root plants to retain soil particles to reduce landslides risk
	• Conservation watershed areas to improve water resources

Share Risks (Transfer)	**Accept Risk (Retention)**
• Risk Financing • Risk Insurance • Catastrophe Bonds	• Self-insurance • Captive finance • Building resilience • Preparedness and early warning systems for effective response

3.4 Country and sector analysis tools

Includes the analysis of disaster risk as a fundamental component in establishing a country's economic, social, environmental, institutional, legislative, political, civil and cultural context and major trends. The following provides an indicative list of assessments that may be consulted or undertaken in developing a country policy and programmes and how each of these, in turn, should ideally address disaster risk concerns where significant:

- *Poverty reduction strategies (PRSs)*. PRSs, the primary government tool in many low-income countries for articulating poverty reduction and growth strategies and thus a key starting point for determining development organization country programming, should pay due regard to disaster-related issues, in both analyzing forms of vulnerability underlying poverty and selecting poverty reduction actions.
- *Country environmental analysis (CEA)*. CEAs should include collation of basic natural hazard data and provide an overview on forms and levels of vulnerability. This, together with available disaster risk indices, should provide sufficient information to determine the potential importance of considering disaster risk in undertaking other forms of background analysis and preparing the country strategy.

- *Economic assessments.* Assessments should explore the nature and extent of economic vulnerability to disasters, in particular considering whether the macroeconomic framework is capable of sustaining major disaster shocks and ways of enhancing economic resilience. In high-risk countries, any economic forecasting exercises should be extended to consider major disaster scenarios.
- *Public expenditure reviews (PER)*. In disaster-prone countries, preparation of PERs should include analysis of the broad budgetary impacts of disasters and related financial responsibilities. Disasters can create significant budgetary pressures, reducing projected revenues and placing additional demands on remaining resources, with potential wider long-term implications for development as well as short-term resource constraints. Fiscal impacts of disasters can be particularly severe in low-income countries with existing problems of governance and poor fiscal and monetary management.
- *Social impact assessments (SIA).* Social impact assessment can play an important role in this understanding. SIA is the process of analyzing, monitoring and managing the social consequences of policies, programmes and projects. These consequences may be positive or negative, intended or unintended, direct or indirect; they may be short-term impacts or long-term changes. As well as helping to explain how a proposed action will change the lives of people in communities, SIA indicates how alternative actions might mitigate harmful changes or implement beneficial ones.
- *Sectoral studies.* Various sectoral studies may be undertaken or consulted (for instance, on agriculture, transport, education, health or small and medium-sized enterprises). Again, these should include assessments of disaster risk, including analysis of the impact of past disasters, the vulnerability of physical and social infrastructure and disaster risk-related implications of ongoing reforms and structural changes. They should also outline required measures to reduce risk, including any adjustments to other planned objectives and activities – for instance, to ensure that higher mean agricultural productivity gains are not accompanied by greater inter-annual fluctuations in yields, reflecting an accompanied rise in vulnerability to climatic variability.

PART 4: GUIDELINES FOR DEVELOPING RISK-SENSITIVE SECTORAL INVESTMENT PLANS

According to the GTP II, and in consultation with the government, the key development sectors for mainstreaming DRR are: (1) agriculture and rural transformation, (2) transportation/road infrastructure, (3) Water and irrigation, (4) health development, and (5) environment and climate resilient green economy, (6) urban development, (7) housing and construction, (8) labor and social affairs, (9) education.

Mainstreaming Steps	Key Activities
Step 1: Conduct Sectoral Risk Assessment	1.1. Develop or enhance risk assessment methodology for the sector 1.2. Conduct a comprehensive sectoral risk assessment and increase accessibility and usability
Step 2: Evaluating and increasing institutional capacity	2.1. Evaluation of the sector's status on mainstreaming DRM 2.2. Institutional capacity building to support mainstreaming process 2.3. Enabling environment and risk governance assessment on mainstreaming DRM 2.4. Identify and select key sectoral tools selected and revised which can support mainstreaming process (ex. Environmental Impact Assessment for Environment Sector, Land Use Planning for Agriculture, Water Resource Assessment for the Water sector, Public Health Assessments for the Health Sector)
Step 3: Establish Sectoral Mainstreaming DRM Framework	3.1. Develop targets and indicators for mainstreaming DRM into the Sector 3.2. Publish policy guidelines for mainstreaming DRM into the sector 3.3. Identify practical entry points and key priorities for mainstreaming DRM for the sector
Step 4: Develop Mainstreaming Action Plan	4.1. Identify and finalize key mainstreaming actions for the sector based on risk-informed decisions (Step 1), evaluation of institutional capacity (Step 2), and using the mainstreaming framework (Step 3) 4.2. Develop short and medium-term action plans on mainstreaming DRM based from the identification of mainstreaming actions

Step 5: Implementation and Monitoring	5.1. Implement the initial steps for mainstreaming DRM based from the practical entry points, priorities and the mainstreaming action plan 5.2. Progress monitoring methodology and plan for mainstreaming DRM into agriculture sector developed, implemented and key persons trained

4.1: MINISTRY OF AGRICULTURE

The Ministry of Agriculture is the lead institution with respect to agriculture-related hazards and associated disasters such as livestock diseases and crop pests and diseases as well as regarding addressing disaster induced shortages of animal feed and crop seed supply.

Strategic Direction (under GTP II)

(i) development of smallholder crop and pastoral agriculture will be further enhanced and hence will remain the main source of growth and rural transformation during the GTP II period;
(ii) provide all rounded support to educated youth to enable them organize and engage in agriculture investment;
(iii) enhance provision of the necessary support for domestic and selected foreign investors taking their capacity into consideration to enable them participate in transformative agriculture sub sectors such as crop, flower, vegetables and fruits and livestock development;
(iv) further pursue implementation of the scaling up strategy as suitable to the various agro-ecological development zones; and
(v) pursue holistic measures aimed at addressing constraints and challenges related to supply of agricultural inputs and utilization of agricultural technologies.

Ensuring sustainable agriculture through the development of natural resources, aligning the agriculture development plan with the green economy development strategy coupled with expansion of irrigation developments are the strategic directions to be pursued with regard to natural resource conservation and management.

Enhancing the income of farming households through progressive transition from producing subsistence crops into high value crops, putting in place efficient agricultural marketing system, and enabling the youth and women in rural areas benefit from agricultural development are the other strategic directions to be pursued during the GTP II period.

Medium term and long-term livelihood improvement and alternative income generating activities will be undertaken in arid and semi-arid areas of the country as complementary strategic direction in the coming five years.

Objectives

1. bring about accelerated and sustained growth of agriculture within the framework of the Climate Resilient Green Economy Strategy that equitably benefits people at all levels and that realizes structural transformation of the sector and the overall economy
2. Bring about a significant shift in agricultural productivity, build productive capacity and thereby enhance the contribution of the sector to the economy and stabilizing the macro economy;

3. to enable women, youths and other stakeholders participate in a structured and organized manner to contribute their part and benefit from the development outcomes.

Ethiopia's Agricultural Sector Policy and Investment Framework (PIF) 2010-2020

Ethiopia's Agricultural sector policy is aligned to the CAADP: Comprehensive Africa Agriculture Development Program, and addresses national level aspirations expressed in PASDEP, the new FYGTP and Ethiopia CAADP.

PIF serves as a sustained and coordinated investment framework spanning the next ten years (as a minimum) which has broad consensus support amongst Government, development partners and other stakeholders.

The CAADP Compact sets out a clear roadmap for ongoing development of the sector and confirms Government and donor responsibilities in meeting this challenge. The PIF presented herein represents a further step forward in realizing the aspirations of the CAADP Compact and the new FYGTP. The four simple strategic objectives which are the skeleton of the PIF correspond to the four CAADP pillars and provide a framework for the investments needed over the next ten years.

The Goal of the PIF is to "contribute to Ethiopia's achievement of middle income status by 2020".

The Development Objective aims to "sustainably increase rural incomes and national food security". This objective embodies the concepts of producing more, selling more, nurturing the environment, eliminating hunger and protecting the vulnerable against shocks; all of which are embodied in various national policy instruments, and are expressed in terms of four main themes, each with its own Strategic Objectives:

Thematic Area	**Strategic Objectives (SOs)**
Productivity and Production	SO1: To achieve a sustainable increase in agricultural productivity and production
Rural Commercialization	SO2: To accelerate agricultural commercialization and agro-industrial development
Natural Resource Management	SO3: To reduce degradation and improve productivity of natural resources
Disaster Risk Management and Food Security	SO4: To achieve universal food security and protect vulnerable households from natural disasters

Other sectoral strategies and policies are key to realizing the objectives of the agricultural and rural development sector, which must also be acknowledged. These include:

- Economic Growth Corridor strategy
- Industrialization Development Strategy
- Water Sector Strategy; and
- National Nutrition Policy

MAJOR TARGETS: GTP II – Agriculture

Crop Productivity and Production (by end of 2019/20)

- Total production of stalk cereals is projected to increase from 115 million quintals in 2014/15 to 171.78 million quintal
- Total production of non-stalk cereals is projected to increase from 120.3 million quintals in 2014/15 to 184.22 million quintal
- Total production of pulse crops is projected to increase from 26.4 million quintals in 2014/15 to 38.75 million quintals
- Total production of oil crops is projected to increase from 7.5 million quintals in 2014/15 to 11.5 million quintal

Livestock Productivity and Production (by end of 2019/20)

- Total meat production (cattle, goat, camel and poultry) is projected to increase from 1,321 thousand tons in 2014/15 to 2,103 thousand tons
- Total milk production (cow, goat and camel) is projected to increase from 5,304 million litres in 2014/15 to 9,418 million litres
- Total skins and hides production is projected to increase from 22.4 million in 2014/15 to 35.6 million
- Total eggs production is projected to increase from 163 million in 2014/15 to 3,938 million
- Total production of honey is projected to increase from 60.7 thousand tons in 2014/15 to 123.9 thousand tons
- Total production of wax is projected to increase from 5.7 thousand tons in 2014/15 to 8.6 thousand tons
- Total production of fish is projected to increase from 31.5 thousand tons in 2014/15 to 47 thousand tons
- Total production of silk cocoon is projected to increase from 3 tons in 2014/15 to 7 tons

Natural Resources Conservation and Utilization (by end of 2019/20)

- **Watershed management**
  - The number of community watersheds with a development plan is projected to increase from 19,748 in 2014/15 to 93,713
  - the area of land rehabilitated through area closure is projected to increase from 10.86 million hectare in 2014/15 to 22.54 million hectare
  - the area of watersheds supported with physical soil and water conservation structures is projected to increase from 8.12 million hectare in 2014/15 to 27.23 million hectare
  - 1.5 million jobs are to be created for citizens through development works in watershed management

- **Rural land administration (**by end of 2019/20)
  - Provide land use certificates
  - prepare national rural land use master plan
  - prepare land administration and utilization master plan for each regional state

- **Expansion of small scale irrigation (**by end of 2019/20)
  - increase the area of land covered by irrigation from 2.34 million hectare in 2014/15 to 4,143,000 hectares
  - develop 1,743,000 hectare additional irrigated land during the plan period and providing access to at least one alternative water point for 80% of smallholder farmers (semi-pastoralists) of which 50% are users of the full irrigation farming package

MAINSTREAMING DRM INTO THE AGRICULTURE SECTOR

Step 1: Conduct agriculture sectoral risk assessment

Conducting an agriculture sector risk assessment for the whole Ethiopia. Including the existing hazards that the sector faces, the highly exposed areas, the vulnerable factors, and the u of the sector. The risk assessment will act as a baseline on the current status of the agriculture sector on mainstreaming DRM and will provide significant information on which locations in Ethiopia are most at risk. The risk assessment will also determine the set of key actions and lead to the development of the mainstreaming action plan (Step 4). Sectoral risk assessments ensures that decision-making processes and selection of key actions are risk-informed, and the government and its people are aware on the need to mainstream DRM into the agriculture sector.

Key Activities

1.1. Develop or enhance risk assessment methodology which will be used by the agriculture sector

1.2. Complete a comprehensive agriculture-sector risk assessment and increase accessibility through web-based platforms

- Identified exposed elements relevant to agriculture
- Socio-economic/natural/physical vulnerabilities
- Expected direct and indirect impacts of various hazards to agriculture

Step 2. Evaluate and increase the Agriculture Sector's capacity on mainstreaming DRM

The evaluation of the sector's capacity on DRM will give us an understanding of the existing challenges, needs, gaps, and strengths of the agriculture sector on the key thematic areas of mainstreaming DRM, and identify institutional needs to support the mainstreaming process. This step will result in creating a capacity building strategy to ensure that the challenges and gaps are filled for the agriculture sector. This step feeds into the agriculture-specific mainstreaming DRM framework for Ethiopia and in the development of the mainstreaming action plan, and in the implementation and monitoring.

Key Activities

2.1. Evaluation of Ethiopia's status on mainstreaming DRM into the Agriculture Sector

2.2. Institutional capacity building to support mainstreaming process

2.3. Enabling environment and sectoral risk governance assessment on mainstreaming DRM

2.4. Existing sectoral analysis/assessment tools selected and revised to support mainstreaming process (ex. Land Use Plans)

Step 3: Establish an agriculture-specific mainstreaming DRM framework for Ethiopia

This step seeks to strengthen the policy linkages between SPIF, GTPII and Agriculture sector objectives, targets, and implementation strategy which will provide a platform to support risk

governance in the sector and to establish a sectoral strengthened policy, legal and regulatory framework for mainstreaming.

Key Activities

3.1. Targets and indicators for mainstreaming DRM into the Agriculture Sector
   - Using an integrated approach to sectoral, national and global targets (ex. Agriculture Sector Priorities is in line with SDG Goals 1, 2, 3, 8 and SFDRR Targets 2, 3, 7)

3.2. Policy guidelines for mainstreaming DRM into the agriculture sector
   - Support the understanding of why we need to mainstream DRM into the agriculture sector
   - Encourage government to take action to mainstream DRM into the agriculture sector

3.3. Identify practical entry points and key priorities for mainstreaming DRM into the agriculture sector

Step 4: Develop Mainstreaming Action Plan

Based on the outputs of steps 1 through 3, a mainstreaming action plan will be developed in-line with GTP II, SPIF, and Agriculture strategies, targets, and implementation strategy.

Key Activities

4.1. Identify and finalize key mainstreaming actions for the sector based on risk-informed decisions (Step 1), evaluation of institutional capacity (Step 2), and using the mainstreaming framework (Step 3)

4.2. Develop short and medium-term action plans on mainstreaming DRM based from the identification of mainstreaming actions

Step 5: Implementation and monitoring

This step is the implementation phase of the mainstreaming process. Once all previous steps has been accomplished, the initial implementation stage should begin from the practical entry point and key priorities for mainstreaming DRM and in-line with the Mainstreaming Action Plan.

Key Activities

5.1. Implement the initial steps for mainstreaming DRM based from the practical entry points, priorities and the mainstreaming action plan

5.2. Progress monitoring methodology and plan for mainstreaming DRM into agriculture sector developed, implemented and key persons trained

Sector: Ministry of Agriculture and Natural Resources, Government of Ethiopia

INFORMATION	DETAIL
Sector	Ministry of Agriculture and Natural Resources
Responsibility[5]	Agriculture related hazards and associated disasters such as **livestock diseases** and **crop pests and diseases**. **Shortages of animal feed** and **crop seed supply** *Source: National Policy and Strategy for Disaster Risk Management*
Part B: Mainstreaming in <u>Policy and Programmes</u>	• Understanding Disaster risk • Tools for mainstreaming in Policy and Programmes • Key policies and programmes for mainstreaming DRR in Ethiopia • Process of mainstreaming in policy and programmes • Case Study: Outcome of mainstreaming in policy and programmes
Understanding Disaster risk in Ethiopia	Disaster Risk in Ethiopia - People suffered from Drought – 14 million in 2003; in the period from between 2000 and 2007, was never below 1.5 million persons (DRM-SPIF, page 12)[6] - Climate risk and food security in Ethiopia[7] - Most important hazards in Ethiopia[8] - Rural households often quote frost and hail, crop pests and diseases, livestock disease and conflict as important hazards[8] - Incident and prevalence of shocks by - region, type, sex of households, education, poverty status, rural and urban[9] - Livelihood context[6]

[5] https://www.dropbox.com/s/ellhj2s75244poq/Ethiopia_National%20Policy%20And%20Strategy%20on%20DRM%202014.pdf?dl=0
[6] https://www.dropbox.com/s/lrhjp4xfrrw8631/DRM%20SPIF%202014%20-%20Final.pdf?dl=0
[7] http://documents.wfp.org/stellent/groups/public/documents/newsroom/wfp269379.pdf?_ga=1.49565926.1554335971.1489397980
[8] https://www.dropbox.com/s/oswfermy1qk0cjg/Atlas-Final-Web-Version-6_14.pdf?dl=0
[9] https://www.dropbox.com/s/fgcne5yqrd404q2/Development%20and%20Poverty%20in%20Ethiopia%281995-96%29%282010-11%29.pdf?dl=0

INFORMATION	DETAIL
	- Data on Disaster losses, Crop Production damages, Economic vulnerability, livestock diseases – for DIRE Wereda[10] - Data on drought and flood affected population[11]
DRM components in Ethiopia	**DRM Policy & Strategy** National Policy and Strategy on Disaster Risk Management[5] Disaster Risk Management Strategic Programme and Investment Framework (DRM-SPIF)[6] **Risk Assessment/Information** i) Wereda Disaster Risk Profile[10] ii) The Atlas of Ethiopian livelihoods[8] **Risk Reduction (Preparedness, prevention and mitigation)**[6] i) Early warning information management system ii) Productive safety net programme (PSNP), iii) Livelihood Early Assessment and Protection LEAP – Food security early warning tool iv) Household-asset building component v) Hotspot (Woredas of Concern) Classification Guideline vi) Managing environment resources to enable transition to sustainable livelihood programmes vii) Pastoral Community Development Programme viii) Wereda Disaster Risk Mitigation/Adaptation Planning Guideline ix) Contingency and risk financing options **Emergency response, rehabilitation, and recovery**[6] i) Wereda Contingency Planning Guideline ii) National Guideline on Livestock Relief, National Drought contingency plan iii) Sectoral Task Forces iv) Humanitarian Requirement Document v) Government Food Distribution mechanisms

[10] https://www.dropbox.com/s/ql6ztsrrk8h68ff/Dire%20Wereda%20WDRP%20Booklet.pdf?dl=0
[11] Risk Baseline dataset for Ethiopia. https://data.humdata.org/dataset/eth_baseline_data

INFORMATION	DETAIL
	vi) Joint Emergency Operation Plan vii) National Incident Management System viii) Food Management Task Force
DRM components in Agriculture Sector	Food Security Programme[12] 1. Productive Safety Net Programme (PSNP) 2. Household Asset Building Programme (HABP) 3. Resettlement Programme 4. Complementary Community Investment
Key Development policies/strategies/ programmes	1. Growth and Transformation Plan II (GTP II) (2015/16-2019/20)[14] 2. Rural Development Policy and Strategies[13] 3. Development and Poverty in Ethiopia 1995/96-2010/11[9] 4. A Plan for Accelerated and Sustained Development to End Poverty (PASDEP)
Key Development policies/strategies/ programmes on Agriculture Sector	1. Growth and Transformation Plan II (GTP II) (2015/16-2019/20) for agriculture sector[14] - **Productivity and Production** – *Agriculture Growth Programme; Participatory Small-scale Irrigation Development Programme skill development, Seed and fertiliser supply, Soil fertility management, Livestock development, Research* - **Rural Commercialisation –** *Household Asset Building Programme (HABP), Market system and infrastructure, Cooperative development, Agricultural credit, Private sector support* - **Natural Resource Management –** *Sustainable Land Management – ESIF, Programme, PSNP, Ethiopia Land Administration and Land Use Development Project (ELALUDEP), Natural resources development* 2. The Agriculture Sector Policy and Investment Framework (PIF)[15]

[12] https://www.dropbox.com/s/lmo40g1alw2cbon/FSP_presentation_at_Accra_Ghana.pdf?dl=0
[13] https://www.dropbox.com/s/mvrpy27nrff3tsc/moard%20policy%20%26%20strategy-%20english.pdf?dl=0
[14] https://www.dropbox.com/s/8svglkrbqrql704/GTP2_English_Translation_Final_June_21_2016.pdf?dl=0
[15] http://gafspfund.org/sites/gafspfund.org/files/Documents/Ethiopia_5_of_6_CAADP_Post_compact_Investment_Plan_(PIF)_0.pdf

INFORMATION	DETAIL
DRM Linkages to Key Development policies/strategies/ programmes	1. Growth and Transformation Plan II (GTP II) (2015/16-2019/20) 2. Development and Poverty in Ethiopia 1995/96-2010/11 3. The Agriculture Sector Policy and Investment Framework (PIF) 4. Climate Resilient Green Economy strategy
Growth and Transformation Plan II (GTP II) (2015/16-2019/20) for agriculture sector[14]	**Productivity and Production** – *Agriculture Growth Programme; Participatory Small-scale Irrigation Development Programme skill development, Seed and fertiliser supply, Soil fertility management, Livestock development, Research* **Rural Commercialisation –** *Household Asset Building Programme (HABP), Market system and infrastructure, Cooperative development, Agricultural credit, Private sector support* **Natural Resource Management –** *Sustainable Land Management – ESIF, Programme, PSNP, Ethiopia Land Administration and Land Use Development Project (ELALUDEP), Natural resources development*
MAJOR TARGETS Growth and Transformation Plan II (GTP II) (2015/16-2019/20) for agriculture sector[14]	**Major targets under GTP - II: -** **Crop Productivity and Production (**by end of 2019/20) • Total production of stalk cereals is projected to increase from 115 million quintals in 2014/15 to 171.78 million quintal • Total production of non-stalk cereals is projected to increase from 120.3 million quintals in 2014/15 to 184.22 million quintal • Total production of pulse crops is projected to increase from 26.4 million quintals in 2014/15 to 38.75 million quintals • Total production of oil crops is projected to increase from 7.5 million quintals in 2014/15 to 11.5 million quintal **Livestock Productivity and Production (**by end of 2019/20) • Total meat production (cattle, goat, camel and poultry) is projected to increase from 1,321 thousand tons in 2014/15 to 2,103 thousand tons • Total milk production (cow, goat and camel) is projected to increase from 5,304 million litres in 2014/15 to 9,418 million litres • Total skins and hides production is projected to increase from 22.4 million in 2014/15 to 35.6 million • Total eggs production is projected to increase from 163 million in 2014/15 to 3,938 million • Total production of honey is projected to increase from 60.7 thousand tons in 2014/15 to 123.9 thousand tons • Total production of wax is projected to increase from 5.7 thousand tons in 2014/15 to 8.6 thousand tons • Total production of fish is projected to increase from 31.5 thousand tons in 2014/15 to 47 thousand tons • Total production of silk cocoon is projected to increase from 3 tons in 2014/15 to 7 tons **Natural Resources Conservation and Utilization (**by end of 2019/20) • **Watershed management**

INFORMATION	DETAIL
	o The number of community watersheds with a development plan is projected to increase from 19,748 in 2014/15 to 93,713 o the area of land rehabilitated through area closure is projected to increase from 10.86 million hectare in 2014/15 to 22.54 million hectare o the area of watersheds supported with physical soil and water conservation structures is projected to increase from 8.12 million hectare in 2014/15 to 27.23 million hectare o 1.5 million jobs are to be created for citizens through development works in watershed management • **Rural land administration (**by end of 2019/20) o Provide land use certificates o prepare national rural land use master plan o prepare land administration and utilization master plan for each regional state • **Expansion of small scale irrigation (**by end of 2019/20) o increase the area of land covered by irrigation from 2.34 million hectare in 2014/15 to 4,143,000 hectares o develop 1,743,000 hectare additional irrigated land during the plan period and providing access to at least one alternative water point for 80% of smallholder farmers (semi-pastoralists) of which 50% are users of the full irrigation farming package
Implementation Strategy[14] Growth and Transformation Plan II (GTP II) (2015/16-2019/20) for agriculture sector	• **Improved Crop Productivity and Production** o Strengthening Agricultural Marketing and Cooperatives o Agricultural Inputs Supply and Utilization (Fertilizer supply, Seed supply, Agro Mechanization Inputs Supply) o Expansion of Agricultural Extension system o Enhancing Agricultural Investment • **Livestock Productivity and Production** o Livestock Genetic Improvement o Improved Livestock Health Coverage o Improved Livestock Feed Production o Integrated Implementation of Livestock Value Chain Efficiency • **Natural Resources Conservation and Utilization** o Community based watershed developments (to be continued) o Efficient use of rain water (in moisture rich areas) o Water harvesting, small scale irrigation development and soil and water conservation works (in moisture stressed areas) o Livestock development will be integrated with natural resource development

INFORMATION	DETAIL
	o Building climate resilient green economy o Capacitate climate change mitigation and adaptation strategies (capacity building training)
Key questions for identifying the Entry-points	- *Is sufficient information available on agriculture sector risks analysis? What are the gaps?* - *For designing the agriculture sector country strategy in Ethiopia, what are the risk information available with ministry and how it is used in national development planning tools for agriculture?* - *For project identification, design, appraisal, and implementation, what are the risk information available with the agriculture department and how it is used in designing the programmes on Productivity and Production, Rural Commercialisation, and Natural Resource Management?* - *How do agriculture sector monitor and evaluate the DRR components in the projects and programmes? What are the available tools?*
Mainstreaming DRM/R into Agriculture sector in Ethiopia Guideline examples[16]	**1) Conduct vulnerability and risk assessment related to the agriculture sector** The agriculture sector in Ethiopia is exposed various natural hazard risks and experienced major losses to the agriculture infrastructure. In order to address this issue, it is important that Ministry of Agriculture and Natural Resources related departments (from national to local levels) have a clear understand of risks associated with agriculture sector. Some significant work in this area has been already done by National Disaster Management Commission (NDRMC) by establishing a Methodology for Wereda (i.e. District) Disaster Risk Profile (a comprehensive disaster risk assessment programme). Disaster Risk Profile is successfully conducted in 337 out of 825 Waredas in Ethiopia. Moreover, the profile also cover the losses, damages, and risk information on agriculture sector and can serve as a guidebook to develop specific vulnerability and risk assessment for agriculture sector. **ADPC Experience:** The department of Disaster Risk Assessment and Monitoring of ADPC has successfully provided technical assistance in developing multi-hazard risk profiles and risk assessment for Myanmar, Lao PDR, Bangladesh. The profiles also specifically focus on agriculture as one of the key sectors of priority. **2. Evaluate the impact of natural hazards to the agriculture** The DRM/R strategies can be effectively designed if the impact of natural hazards to the agriculture are properly analysed. Once the vulnerability and risk assessment related to agriculture is carried out, it further provides opportunity to evaluate the potential impact of natural hazards to the agriculture assets in Ethiopia, such as, standing crops, irrigation systems, livestock shelters and veterinary services, aquaculture equipment

[16] https://www.dropbox.com/s/gqvx9zwhq06xd8i/DRM%20mainstreaming%20guidelines.pdf?dl=0

INFORMATION	DETAIL
	or hatcheries; post-production infrastructure such as facilities for storage, processing, marketing and transport, buildings and equipment of farm schools and cooperatives; as well as sector ministries and their departments. Such information will not only help Ministry of Agriculture and Natural Resource to produce accurate estimate and needs of agriculture assets, but also help ministry to design policies, standards, regulations, and projects from the angle of natural hazard risk to the agriculture. **ADPC experience:** **3. Promote the integration of risk and vulnerability assessment on agriculture sector, monitoring and early warning** Ethiopia has one of the most sophisticated EWS in Africa, with an extensive reporting network, together with the use of relatively sophisticated technology such as LEAP, feeding into the DRMFSS' Early Warning and Response Directorate. The data collection has been a strength, but the use of this data in planning and decision making processes still remains week which has also been a challenge in terms of providing timely early warning. This can be further address by establishing or improving the rules for early response to early warning information, based on determined triggers, contingency plans, and finance mechanisms.[17] Another challenge is to bring greater coherence into whole DRM information system which is now characterized by a number information based projects rather than a unified system. Risk assessment, monitoring and early warning products (WDRP, LIAS, and EWS) are not fully harmonized within one system which reduces efficiency, can lead to duplication and risks slowing response. This can be address by designing risk assessment for agriculture in such a way that it can supporting elements early warning systems (i.e. risk knowledge, warning service, dissemination, and response capacity).[18] **ADPC experience:** **4. Develop appropriate DRR strategy and program to address specific vulnerability level within the context of the agriculture sector** Currently, the core DRR strategy and program of Ministry of Agriculture and Natural Resources to address specific vulnerability of agriculture sector in Ethiopia is the Food Security Programme (i.e. resettlement programme, PSNP, HABP, etc.).[12] The programme helps households to progress from the level of food insecurity to the level of food security. In order to strengthen the DRR strategy for agriculture sector, it is important that some medium and long term measures are developed to address specific vulnerability. Some examples of medium term measures include Expanding efforts to promote rainwater harvesting, introducing improved soil management techniques that decrease soil erosion and

[17] https://cgspace.cgiar.org/rest/bitstreams/55242/retrieve
[18] http://www.rimd.org/advf/documentos/46fad12d0a62e5.38742613.pdf

INFORMATION	DETAIL
	increase, soil water holding capacity, adopting of alternative cultivars or crops that are more drought resistant or heat tolerant, and Addressing bottlenecks in seed delivery systems.[19] Some long-term measures include Investigating business and farm/ranch diversification strategies (e.g., selecting drought tolerant varieties, implementing irrigation where feasible and diversifying away from rainfed crops to less water-dependent products, such as honey from bee-keeping, addressing deforestation and desertification (land degradation in drylands), reviewing the effectiveness of mid-term measures and strengthen capacities as needed, strengthening market access and rural infrastructure, reinforcing legal, policy and institutional frameworks for drought risk mitigation and dryland development.[19] **ADPC Experience:** **5. Develop DRR plans and programs for mainstreaming to the agriculture and food security programs** In order to mainstreaming DRM into agriculture sector, the Ministry of Agriculture and Natural Resources has to develop a DRR plans and programmes for mainstreaming. Plan will specifically focus on following aspects: risk information and analysis related to agriculture sectors, damage and losses to the agriculture sector, appropriate DRR strategy and programmes, including short, medium, and long term DRM options, and different entry points in short, medium, and long term planning framework (i.e. Annual national, regional and local development plans; mid-term development plan; and long term plans for the region). The long-term entry points may include drought related laws, regulations and by-laws, DM policy, water policy, land allocation or resettlement policy, energy policy, etc. **ADPC experience:** 6. Promote effective programs of crop diversification including the use of hazard resistant crops, to deal with shifts in climate patterns **ADPC experience:** Under the component 2 Undertaking PIPs on mainstreaming DRR into sectoral development planning processes, ADPC has developed guidelines for mainstreaming DRM into agriculture, which focuses on promoting programmes of contingency crop planning and crop diversification. 7. Ensure sustainable livelihoods in areas of recurrent climate risks by promoting supplementary income generation from off-farm and non-farm activities **ADPC experience:** Under the component 2 Undertaking PIPs on mainstreaming DRR into sectoral development planning processes, ADPC has developed guidelines for mainstreaming DRM into agriculture, which focuses on promoting programmes on supplementary income generation from off-farm and non-farm activities.

[19] https://www.dropbox.com/s/9ir26kkqn4kkgrs/Mainstreaming%20DRM-English.pdf?dl=0

INFORMATION	DETAIL
	8. Promote effective insurance and credit schemes to compensate for crop damage and Losses to livelihoods due to natural hazards. **ADPC experience:** Under the component 2 Undertaking PIPs on mainstreaming DRR into sectoral development planning processes, ADPC has developed guidelines for mainstreaming DRM into agriculture, which focuses on promoting programmes on effective insurance and credit schemes to compensate for crop damage and loss to livelihood.
ADPC Experience	RCC guidelines for mainstreaming DRR into Agriculture Mainstreaming DRR into Development Planning Process in Afghanistan[20]

*to be asked during the interviews and discussion with focal person in the ministry

[20] https://www.dropbox.com/s/rgpz3t6ziertsx3/1-MDRD-Guidebook-Revised-May%202016.pdf?dl=0

4.2: MINISTRY OF WATER, IRRIGATION AND ENERGY

The Ministry of Water, Irrigation and Energy acts as the lead institution with respect to especially floods and other water supply and water dams related to hazards and associated disasters.

Strategic Direction

Water resources for the country is critical for the achievement of rapid and sustainable socio-economic development. Flood and drought control and mitigation efforts are also priorities in the water sector. An integrated water resource development and utilization will give due emphasis to the parallel usage of water supply, irrigation development, watershed management and water infrastructure development activities. In addition, water resources management will be integrated into complementary sectors such as agriculture, health, mining, energy, etc. In the coming five years, water resource development interventions will include, water supply, irrigation and drainage development, hydropower study and design, surface and ground water study and integrated master plan study and watershed management.

The intervention in the sector is highly likely to bring far reaching changes on health, productivity, and quality of life of the citizens. Efforts will also be made to strengthen sanitation activities Moreover, priorities in GTP II will be also to expanding water supply coverage as well as irrigation development. Based on set standards, rural and urban water supply and irrigation expansion activities will be strengthened. To properly develop and utilize ground water resources, credit facilities will be made available to prospective developers in the sector. For emergency activities, necessary machineries such as; rigging, drilling, excavators and accessories will be procured. Private dealers will also be encouraged to store and avail adequate supply of these machines. Parallel usage of project development work, model machinery centres which provide research and training, will be established.

Objectives

The major objectives of the sector is mainly focused on provision of access to safe and sustainable water supply and improved waste water disposal systems; improving potable water supply services and accessibility as well as urban sewerage systems; assessing the quantity and quality of the country's water resources and their contribution to the development of the economy, also mitigate flood and runoff impacts. Similarly, developing and expanding efficient, sustainable and indigenous-technology based medium and large scale irrigation farming, primarily aimed at attaining food security, generating foreign exchange and supplying raw-materials to industries. It also includes conducting medium and large scale irrigation study and design to making them ready for implementation by relevant

stakeholders. Regarding meteorology, supply of reliable and sustainable meteorological data to the general public, especially to mitigate natural and manmade hazards is the major objective. In addition, providing world standard weather prediction and early warning services as well as enhancing local production of imported meteorological instruments and ensuring synergies with relevant stakeholders and agencies are the other meteorological objectives.

Water Policies

Key water policies of Ethiopia include:

- Ethiopia Water Sector Policy
- Ethiopia Water Resource Management Proclamation no. 197/20021
- Ethiopia Water Resource Management Policy
- Ethiopian Water Sector Strategy
- Growth and Transformation Plan II for Water, Irrigation and Electricity
- Africa Water Vision 2025

All of which have direct link to DRM, especially on drought and flood risk management and mitigation which require multi-sectoral efforts,, as highlighted in the below section:

Ethiopia Water Sector Policy – The overall goal of Water Resources Policy is to enhance and promote all national efforts towards the efficient, equitable and optimum utilization of the available Water Resources of Ethiopia for significant socioeconomic development on sustainable basis.

Goal & objective: Managing and combating drought as well as other associated slow on-set disasters through, inter-alia, efficient allocation, redistribution, transfer, storage and efficient use of water resources. Combating and regulating floods through sustainable mitigation, prevention, rehabilitation and other practical measures.

The principal objective of the water resources strategy is to translate the national water resources management policy into action. It aims towards the following:

- Improving the living standard and general socio-economic well-being of the Ethiopian people
- Realizing food self-sufficiency and food security in the country
- Extending water supply and sanitation coverage to large segments of the society, thus achieving improved environmental health conditions
- Generating additional hydro-power
- Enhancing the contribution of water resources in attaining national development priorities, and
- Promoting the principles of integrated water resources management

MAINSTREAMING DRM INTO THE WATER SECTOR

Step 1: Conduct water sector risk assessment

Conducting a water sector risk assessment which will act as a baseline on the current status of the water sector on mainstreaming DRM and will provide significant information on which locations in Ethiopia are most at risk. The risk assessment will also determine the set of key actions and lead to the development of the mainstreaming action plan (Step 4). Sectoral risk assessments ensures that decision-making processes and selection of key actions are risk-informed, and the government and its people are aware on the need to mainstream DRM into the water sector.

Key Activities

1.1. Enhance risk assessment methodology for the water sector which integrates water resource assessment

1.2. A complete, and comprehensive water-sector risk assessment is available and is accessible online

- Identified exposed elements relevant to the water sector
- Socio-economic/natural/physical vulnerabilities
- Expected direct and indirect impacts of various hazards to the water sector

Step 2. Evaluate the Water Sector's capacity on mainstreaming DRM

The evaluation of the sector's capacity on DRM will give us an understanding of the existing challenges, needs, gaps, and strengths of the water sector on the key thematic areas of mainstreaming DRM, and identify institutional needs to support the mainstreaming process. This step will result in creating a capacity building strategy to ensure that the challenges and gaps are filled for the water sector. This step feeds into the sector-specific mainstreaming DRM framework for the sector and in the development of the sectoral mainstreaming action plan, and in the implementation and monitoring.

Key Activities

2.1. Evaluation of Ethiopia's status on mainstreaming DRM into the water sector

2.2. Institutional training to increase capacity to support mainstreaming process

2.3. Enabling environment and sectoral risk governance assessment on mainstreaming DRM

2.4. Key water-sector assessment tools to selected and revised to support mainstreaming process (ex. water resource assessment)

Step 3: Develop a water sector-specific mainstreaming DRM framework

This step seeks to strengthen the policy linkages between SPIF, GTPII and sector objectives, targets, and implementation strategy which will provide a platform to support risk governance in the sector and to establish a sectoral strengthened policy, legal and regulatory framework for mainstreaming.

Key Activities

3.1. Targets and indicators for mainstreaming DRM into the Water Sector

3.2. Policy guidelines for mainstreaming DRM into the Water sector

- Supports the understanding of why we need to mainstream DRM
- Encourages government to take action to mainstream DRM for the water sector

3.3. Identification of practice entry points and key priorities for mainstreaming DRM for the sector

Step 4: Develop Mainstreaming Action Plan

Based on the outputs of steps 1 through 3, a mainstreaming action plan will be developed in-line with GTP II, SPIF, and water sector strategies, targets, and implementation strategy.

Key Activities

4.1. Identify key mainstreaming actions for the water sector based on risk-informed decisions (Step 1), evaluation (Step 2), and using the mainstreaming framework (Step 3).

4.2. Develop short and medium-term action plans on mainstreaming DRM for the water sector

Step 5: Implementation and monitoring

This step is the implementation phase of the mainstreaming process. Once all previous steps has been accomplished, the initial implementation stage should begin from the practical entry point and key priorities for mainstreaming DRM and in-line with the Mainstreaming Action Plan.

Key Activities

5.1. Implementation of initial steps for mainstreaming DRM

5.2. Progress monitoring methodology and plan for mainstreaming DRM into the water sector developed, and implemented

Sector: Ministry of Water, Irrigation and Electricity, Government of Ethiopia

INFORMATION	DETAIL
Sector	Ministry of Water, Irrigation and Electricity
Responsibility[22]	Lead institution with respect to especially floods and other water supply, and water dams related hazards and associated disasters. *Source: National Policy and Strategy for Disaster Risk Management*
Part B: Mainstreaming in <u>Policy and Programmes</u>	• Understanding Disaster risk • Tools for mainstreaming in Policy and Programmes • Key policies and programmes for mainstreaming DRR in Ethiopia • Process of mainstreaming in policy and programmes • Case Study: Outcome of mainstreaming in policy and programmes
Understanding Disaster risk of floods & related disasters	**Floods in Ethiopia** - Floods April 2016 (Torrential rains and corresponding flash floods since late March have left at least 236,890 people displaced)[23] - Ethiopia – 100 Dead as Flood Threat Worsens Land Degradation[24] - Ethiopia – 20,000 Families Displaced by Floods[25] - Ethiopia – Dozens Killed in Floods and Landslides[26] - Ethiopia Floods – 8,000 Families Displaced[27] **Factors Responsible**
Development Policy and Planning for	

[22] https://www.dropbox.com/s/ellhj2s75244poq/Ethiopia_National%20Policy%20And%20Strategy%20on%20DRM%202014.pdf?dl=0
[23] http://reliefweb.int/disaster/fl-2016-000045-eth
[24] http://floodlist.com/africa/ethiopia-100-dead-flood-threat-worsens
[25] http://floodlist.com/africa/ethiopia-families-displaced-belg-rain-floods-may-2016
[26] http://floodlist.com/africa/ethiopia-floods-landslides-wolaita-bale
[27] http://floodlist.com/africa/ethiopia-floods-8000-families-displaced

INFORMATION	DETAIL
Water, Irrigation and Electricity	1. Ethiopia Water Sector Policy[28] 2. Ethiopia Water Resource Management Proclamation no. 197/2000[29] 3. Ethiopia Water Resource Management Policy 4. Ethiopian Water Sector Strategy 5. Growth and Transformation Plan II for Water, Irrigation and Electricity 6. Africa Water Vision 2025
DRM Linkages to Key Development policies/strategies/ programmes	**1. Ethiopia Water Sector Policy –** The overall goal of Water Resources Policy is to enhance and promote all national efforts towards the efficient, equitable and optimum utilization of the available Water Resources of Ethiopia for significant socioeconomic development on sustainable basis. **DRM Linkage** *Goal & objective:* Managing and combating drought as well as other associated slow on-set disasters through, interalia, efficient allocation, redistribution, transfer, storage and efficient use of water resources. Combating and regulating floods through sustainable mitigation, prevention, rehabilitation and other practical measures. *Disasters, Emergencies and Public Safety:* Recognize and adopt that management of disasters associated with water, shall form an integral part of water resources management. • Promote coordinated planning to combat drought and growing desertification through including, long-term water allocation and conservation measures and also rehabilitative actions on catchment management. • Ensure and promote the safety of water retaining, transmission and diversion structures like weirs, barrages, dams, reservoirs and pipelines, against natural and man-made disasters for the:- - protection and conservation of the available water, the structures and all systems and equipment, - protection of the environment, human settlements, flora and fauna, socio-economic infrastructures. • Develop long term water balances/drought models with different scenarios including interventions like inter-basin water transfer. • Establish preparedness and contingency plans for disasters and emergencies, in terms of :- - provision and continuation of services during and after emergencies, - plans for rehabilitation and repair of water systems,

[28] https://www.dropbox.com/s/uaeyizt77m6euwh/Water%20policy%20%282%29.doc?dl=0

[29]

INFORMATION	DETAIL
	- protection of water bodies and water systems from pollution and depletion. • Put in place routine and random safety checks on existing systems. **Hydro power policy -** Establish code of practice for study and design of hydropower development schemes adequately addressing technical, economic, environmental and stakeholders' issues (5 – 2.3.3.3 Policies) **Irrigation policy -** Minimize and mitigate as much as possible, the negative environmental impacts associated with irrigation development (E – Environmental Issues) **2. Ethiopia** Water Resource Management Proclamation no. 197/2000 – The purpose of the Proclamation is to ensure that the water resources of the country are protected and utilized for the highest social and economic benefit of the people of Ethiopia, to follow up and supervise that they ale duly conserved, ensure that harmful effects of water are prevented, and that the management of water resources is carried out properly. DRM Linkages – Water Banks and Harmful Effects of Water *Protection of Banks of Water Bodies* The supervising body, in collaboration and in consultation with the appropriate public body may: 1. Delimit the boundaries of the banks of certain water bodies; 2. Prohibit clearing, cutting trees or vegetation and construction of residential houses, within the delimited banks of water bodies. The details shall be determined pursuant to the directives to be issued by the Ministry. *Control of Harmful Effects of Water* The appropriate bodies shall, before allowing or causing the foundation of towns or villages, request the supervising body for technical advice in order to prevent or avoid damages, adverse impacts or accidents which may occur as a result of floods and other factor related to water. **3. Ethiopia Water Resource Management Policy –** Part of the overall objectives of the Ethiopian Water Resources Management Policy of 1999 are 'managing and combating drought as well as other associated slow on-set disasters through, inter alia, efficient allocation, redistribution, transfer, storage and efficient use of water resources', and 'combating and regulating floods through sustainable mitigation, prevention, rehabilitation and other practical measures'.116 The Policy goes on to address disasters, emergencies and public safety specifically, acknowledging that the management of disasters associated with water must form an integral part of water resources management. Importantly, this includes the following: **DRM - Linkages** - provision and continuation of services during and after emergencies - plans for rehabilitation and repair of water systems,

INFORMATION	DETAIL
	- protection of water bodies and water systems from pollution and depletion **4. Ethiopian Water Sector Strategy –** The principal objective of the water resources strategy is to translate the national water resources management policy into action. It aims toward improving: i) Improving the living standard and general socio-economic well-being of the Ethiopian people, ii) Realising food self-sufficiency and food security in the country, iii) Extending water supply and sanitation coverage to large segments of the society, thus achieving improved environmental health conditions, iv) Generating additional hydro-power, v) Enhancing the contribution of water resources in attaining national development priorities, and vi) Promoting the principles of integrated water resources management. **DRM Linkages – Disaster and Public Safety** Co-ordinated efforts in terms of water resources development and management will be made to overcome flood related disasters and combat drought and desertification. Such measures will include the safety of water retaining, transmission and diversion structures like weirs, barrages, dams, reservoirs, pipelines, against natural and man-made disasters. • Develop and implement comprehensive plan of action to address flood related disasters. • Combat the droughts that claim the appalling loss of human life and livestock and deteriorate the environment • Ensure the safety of water structures and carry out periodic safety checks **5. Growth and Transformation Plan II for Water, Irrigation and Electricity** The major objectives of the sector are mainly focused on provision of access to safe and sustainable water supply and improved waste water disposal systems; improving potable water supply services and accessibility as well as urban sewerage systems; assessing the quantity and quality of the country's water resources and their contribution to the development of the economy, also mitigate flood and runoff impacts. Some of the major targets include access to clean water, rural water supply coverage, urban water supply, feasibilities studies for irrigation development, installation of ground meteorological recording stations, and early warning services. **DRM Linkages** Flood and drought control and mitigation efforts are also priorities in the water sector. ***Gaps & challenges - Ethiopia Water Resource Management Policy*** It is clear that the Policy contains very positive language, as well as other positive additions such as the aim to develop the legal basis for active and meaningful participation of all stakeholders, including water users' associations, the community and particularly for women to play the central role in water resources management activities. However, the Policy is still hampered by the lack of clear assignment of institutional responsibility for the extremely long list of requirements it contains. Simply put, they do not have the staff or the training to implement the extremely ambitious.

INFORMATION	DETAIL
Mainstreaming DRM/R into Environment sector in Ethiopia	i) **Promote the use of Wereda Disaster Risk Profile data and information for irrigation development feasibility study and design** – In GTP II plan, medium and large scale irrigation development feasibility studies and designs on 250,000 ha and construction on 280,385ha will be undertaken by the Ministry of Water, Electricity and Irrigation. Wereda risk profile provides key information about the status of Access to water for irrigation in the Community. Moreover, within economic vulnerability – status of agriculture, irrigation input utilized households has been identified as one of the key factor by the population. Thus, while developing the feasibility study and design for irrigation development work, information and data of wereda risk profile should utilized or incorporated in the feasibility study and design process. **ii) Conduct capacity building or training of staff on DRM/R integration into irrigation development, including irrigation and design works** The GTP – II implementation strategies for Potable Water Supply and Irrigation Development in Ethiopia also include conducting awareness trainings for officials involved in planning and policy formulation on irrigation development. Such platform can be used for enhancing officials' knowledge on best practices on DRR into irrigation development projects, including large-scale and small-scale projects. Some of common practices of small scale projects include drip irrigation practices, small scale irrigation and reforestation, water harvesting schemes, small-dam based irrigation programmes, constructing irrigation system, rain water harvesting techniques including floodwater diversion, on-farm runoff retention, soil moisture conservation, impounding in storage structures, etc. Most of these practices are carried by the communities who have generated a vast body of indigenous knowledge on disaster prevention and mitigation, early warning, preparedness and response, and post-disaster recovery.
Case Study	1. Indigenous knowledge in Disaster Management in Africa 2. Case study: Awash River Basin

4.3 MINISTRY OF HEALTH

The Ministry of Health acts as the lead institution with respect to food shortage including malnutrition affecting children and mothers and also other human epidemics associated with disasters.

Strategic directions

Equitable, accessible, and quality primary health service will be provided through the health extension program. In addition, community participation and engagement will continue to be at the center of the primary health care delivery system. Strengthening the health sector leadership and governance system is another pillar strategy to be pursued in GTP II. Similarly, during the second growth and transformation plan period due attention will be given to ensuring quality service delivery in hospitals, improvement in pharmaceutical supply service and ensure institutions are capacitated in terms of human resource and equipment according to the standard set. In addition, the role of the private sector in the delivery of health service will be promoted, while it will be effectively regulated to ensure the provision of good quality health service that satisfies all citizens. Strategies are also designed to prevent the prevalence of diseases resulting from climate change.

Public awareness and engagement will be improved. This will be implemented using model family, strengthening participation of the public wing, formulating legal framework and monitoring its implementation and by strengthening community participation in health administration. In order to improve access to hygiene and environmental health, the proportion of households with access to improved latrines and open defecation free kebeles will be increased.

Objectives

Improve the health outcomes of citizens through provision of equitable, accessible and quality health services, enhance awareness of the public so that they protect themselves from various health hazards.

Mainstreaming DRM into the Health Sector

Step 1: Conduct Health Sector risk assessment

Conducting a health sector risk assessment which will act as a baseline on the current status of the health sector on mainstreaming DRM and will provide significant information on which locations in Ethiopia are most at risk. The risk assessment will also determine the set of key actions and lead to the development of the mainstreaming action plan (Step 4). Sectoral risk assessments ensures that decision-making processes and selection of key actions are risk-

informed, and the government and its people are aware on the need to mainstream DRM into the health sector.

Key Activities

1.1. Developed or enhanced risk assessment methodology which will be used by the health sector

1.2. A complete, and comprehensive health sector risk assessment is available and is accessible online

- Identified exposed elements relevant to the health sector
- Socio-economic/natural/physical vulnerabilities
- Expected direct and indirect impacts of various hazards to the health sector

Step 2. Evaluate the Health Sector's capacity on mainstreaming DRM

The evaluation of the sector's capacity on DRM will give us an understanding of the existing challenges, needs, gaps, and strengths of the health sector on the key thematic areas of mainstreaming DRM, and identify institutional needs to support the mainstreaming process. This step will result in creating a capacity building strategy to ensure that the challenges and gaps are filled for the health sector. This step feeds into the sector-specific mainstreaming DRM framework for Ethiopia and in the development of the mainstreaming action plan, and in the implementation and monitoring.

Key Activities

2.1. Evaluation of Ethiopia's status on mainstreaming DRM into the health sector

2.2. Institutional training to increase capacity to support mainstreaming process

2.3. Conduct enabling environment assessment and risk governance assessment on mainstreaming DRM

2.4. Identify sectoral assessment tools to support mainstreaming (ex. Public Health Assessment)

Step 3: Develop a Health sector-specific mainstreaming DRM framework

This step seeks to strengthen the policy linkages between SPIF, GTPII and sector objectives, targets, and implementation strategy for the health sector which will provide a platform to support risk governance in the sector and to establish a sectoral strengthened policy, legal and regulatory framework for mainstreaming.

Key Activities

3.1. Targets and indicators for mainstreaming DRM into the Health Sector

3.2. Policy guidelines for mainstreaming DRM into the Health Sector

- Support the understanding of why we need to mainstream DRM

3.3. Identify practical entry points and key priorities for mainstreaming DRM for the sector

Step 4: Develop Health Sector Mainstreaming Action Plan

Based on the outputs of steps 1 through 3, a mainstreaming action plan will be developed in-line with GTP II, SPIF, and health sector strategies, targets, and implementation strategy.

Key Activities

4.1. Identify practical entry points and key priorities for mainstreaming DRM

- Identify key mainstreaming actions for the health sector based on risk-informed decisions (Step 1), evaluation (Step 2), and using the mainstreaming framework (Step 3).

4.2. Develop short and medium-term action plans on mainstreaming DRM for the health sector

Step 5: Implementation and monitoring

This step is the implementation phase of the mainstreaming process. Once all previous steps has been accomplished, the initial implementation stage should begin from the practical entry point and key priorities for mainstreaming DRM and in-line with the Mainstreaming Action Plan.

Key Activities

5.1. Implementation of initial steps for mainstreaming DRM based on Step 4

5.2. Progress monitoring methodology and plan for mainstreaming DRM into the water sector developed, and implemented

Sector: Ministry of Health, Government of Ethiopia

INFORMATION	DETAIL
Sector	Ministry of Health
Responsibility[30]	**Food shortage** induced **malnutrition** affecting children and mothers and also other **human epidemics** associated with disasters *Source: National Policy and Strategy for Disaster Risk Management*
Part B: Mainstreaming in Policy and Programmes	• Understanding Disaster risk • Tools for mainstreaming in Policy and Programmes • Key policies and programmes for mainstreaming DRR in Ethiopia • Process of mainstreaming in policy and programmes • Case Study: Outcome of mainstreaming in policy and programmes
Understanding Disaster risk on Health Sector	**Disaster risk to Health Sector in Ethiopia** - Health sector is prone to drought and floods and effects on health has been catastrophic - Drought - Since 1974, the occurrence of drought has become more frequent, severe in magnitude, and has been causing loss of human lives and property damage. The most severe events were in the year 1974, 1983, 1987, 1989, 2003, 2005, 2008, and 2009[31, 32] - Floods are the second natural disaster in Ethiopia. They have been occurring more frequently and affecting the country almost every year between 1993 and 2013[31, 33] - Different epidemic occurrence is another disaster causing mortality and morbidity in the country. Epidemics - measles, dysentery, meningococcal meningitis, anthrax, influenza A and B, relapsing fever and yellow fever are the major, as commonly reported by the government.[31, 34, 32] - Severe Acute and chronic malnutrition after drought

[30] https://www.dropbox.com/s/ellhj2s75244poq/Ethiopia_National%20Policy%20And%20Strategy%20on%20DRM%202014.pdf?dl=0
[31]https://www.dropbox.com/s/ezmuq3c46onorv5/Health%20Sector%20Initiatives%20for%20Disaster%20Risk%20Management%20in%20Ethiopia_%20A%20Narrative%20Review%20%E2%80%93%20PLOS%20Currents%20Disasters.pdf?dl=0
[32] Prevention Web. Ethiopia, Disaster Statistics, Natural Disasters from 19802010.Accessed from: http://www.preventionweb.net/english/countries/statistics/?cid=59
[33] https://www.dropbox.com/s/d6pjmtrfxvjgsyr/14757_6thCGCountryProgramSummaries1.pdf?dl=0
[34] https://www.dropbox.com/s/xe2yd4qs30x9odc/phem-guideline-final.pdf?dl=0

INFORMATION	DETAIL
	Factors Responsible
DRM Policy and Strategy for Health Sector	1. Public Health Emergency Management - Guidelines for Ethiopia 2012[34] 2. Protocol for the Management of Severe Acute Malnutrition – Guideline[35] **Public Health Emergency Management - Guidelines for Ethiopia 2012** – The Federal Ministry of Health and its Agencies identified 7 core processes that will enable the fulfilment of sectoral visions and missions. Public Health Emergency Management (PHEM) is one of the core processes identified. PHEM is designed to ensure rapid detection of any public health threats, preparedness related to logistic and fund administration, and prompt response to and recovery from various public health emergencies in Ethiopia. The activities under this core process are to be implemented by appropriately trained and capable professionals. This core process is comprised of four sub-processes which are: Public Health Emergency Preparedness, Early Warning, Response, and Recovery. The major public health risks identified in the Ethiopian health system are prioritized in following order: i) Epidemics of communicable disease, ii) Drought conditions with malnutrition, iii) Food contamination, iv) Flood, v) Pandemic Influenza, vi) Diseases that affect people during conflicts and in displaced populations, vii) Accidents including chemical spills, viii) Earthquake, volcanic eruptions, and ix) Bioterrorism
Development Policy and Planning for health sector	7. Health Policy of Ethiopia[36] 8. Health Sector Transformation Plan[37] 9. Growth and Transformation Plan for Health[38]
DRM Linkages to Key Development policies/strategies/ programmes	**6. Health Policy of Ethiopia –** The Health Policy of the Transitional Government is the result of a critical examination of the nature, magnitude and root causes of the prevailing health problems of the country and awareness of newly emerging health problems. It is founded on commitment to democracy and the rights and powers of the people that derive from it and to decentralization as the most appropriate system of government for the full exercise of these rights and powers in our pluralistic society. **DRM Linkage**

[35] https://www.dropbox.com/s/59t5aft50e1mj78/ethiopia-sam-guideline-march-2007.pdf?dl=0
[36] https://www.dropbox.com/s/2202flhnhi02yzv/2004-Oct-Tue-040225.pdf?dl=0
[37] https://www.dropbox.com/s/em9ihvinxrpsujz/Health%20Sector%20Transformation%20Plan.pdf?dl=0
[38] https://www.dropbox.com/s/6exq1r9nja1yrfg/GTP2_English_Translation_Final_June_21_2016.pdf?dl=0

INFORMATION	DETAIL
	Within the priorities of the policy, emphasis has been given to the control of communicable diseases, epidemics and diseases related to malnutrition and poor living conditions. Moreover, special attention has been given to the health needs of victims of man-made and natural disasters. **7. Health Sector Transformation Plan –** The Health Sector Transformation Plan (HSTP) is the first phase of a 20-year plan titled, 'Envisioning Ethiopia's Path to Universal Health Care through strengthening of Primary Health Care'. Therefore, the performance measures and targets of HSTP are based on the envisioning plan. The main goal of the health system is ensuring that everyone who needs health services (promotion, prevention, curative, rehabilitative and palliative services) is able to get them without undue hardship. **DRM Linkages** Within the list of strategic objectives, component P2: Improve Health Emergency Risk Management for strengthening internal process has been identified for strengthening DRM for health sector in the country. Moreover, key components, outcomes, targets are identified as an implementation strategy. **8. Growth and Transformation Plan for Agriculture –** The plan provides strategic directions, objectives, targets, implementation strategies for health sector development in Ethiopia. **DRM Linkages** Improve health and non-health related risk management
Mainstreaming DRM/R into Health sector in Ethiopia	i) **Promote the use of Wereda Disaster Risk Profile data and information for enhancing the health sector vulnerability and risk assessment mapping -** The Ministry of Health, Government of Ethiopia has planned to strengthen its capacity of Health Emergency Risk Management system through implementing the key strategic initiatives/activities under the Health Sector Transformation Plan (2015/16 - 2019/20). One of key initiatives is to "Enhance regular risk assessment (hazard, vulnerability, and capacity analysis) and early warning; and development of public health risks profile maps for each woreda. Recently, in December, 2016, the National Disaster Risk Management Commission (NDRMC) has developed a methodology for Wereda Disaster Risk Profile (comprehensive disaster risk assessment programme) and successfully conducted wereda risk assessment in 337 weredas. Moreover, in the profile, one section specifically deals with health and sanitation characteristics in wereda with different hazard exposure. Thus, overall disaster risk assessment findings of the weredas, including methodology can serve or provide technical input to the Ministry of Health in enhancing health sector risk assessment initiative in Ethiopia. ii) **Develop Hospital and Health Facility Safety Index –** In order to strengthen the Institutional Capacity for Health Disaster Risk Management in Ethiopia, Hospital and Health Facility Safety Index has been identified as one of core component of the 10-year Africa regional strategy for health disaster risk management adopted during the 62nd Regional Committee for Africa (RC62) in November,

INFORMATION	DETAIL
	2012.[39] The Index is also significant as it can play significant role in the implementation of "reduction of underlying risk factors to health and health systems", which is one of key strategic initiatives of Health Sector Transformation Plan (2015/16 - 2019/20) for strengthening the Health Emergency Risk Management in Ethiopia.
Case Study	**HOSPITAL SAFETY INDEX - PAN AMERICAN HEALTH ORGANIZATION[40]** The Hospital Safety Index, a tool developed by the Pan American Health Organization and a group of Caribbean and Latin American experts, is being widely used by health authorities to gauge the overall level of safety of a hospital or health facility in emergency situations. The Hospital Safety Index helps health facilities to assess their safety and avoid becoming a casualty of disasters by providing a snapshot of the probability that a hospital or health facility will continue to function in emergency situations, based on structural, non-structural and functional factors, including the environment and the health services network to which it belongs. By determining a hospital's Safety Index or score, countries and decision makers will have an overall idea of its ability to respond to major emergencies and disasters. The Hospital Safety Index does not replace costly and detailed vulnerability studies. However, because it is relatively inexpensive and easy to apply, it is an important first step toward prioritizing a country's investments in hospital safety. **HEALTH SECTOR SELF-ASSESSMENT TOOL FOR DISASTER RISK REDUCTION - PAN AMERICAN HEALTH ORGANIZATION[41]** The Health Sector Self-Assessment Tool for Disaster Risk Reduction (the Tool) aims to help health sector managers and health disaster coordinators (HDC) determine the status of key aspects of disaster risk management (DRM) in their country (notably mitigation and preparedness). Its purpose is to assist health disaster coordinators arrive at a comprehensive assessment of disaster mitigation and preparedness of the health sector. Once completed and adjusted to national particularities, it could provide a baseline against which to monitor progress in the implementation of a disaster risk reduction or disaster risk management program, if conducted as part of an annual review process.

39 https://www.dropbox.com/s/c0q2p7rzdj30v1i/Olu%20et%20al.%2C%202013b.%20From%20framework%20to%20action%20Operationalizing%20the%20Hyogo%20Framework%20of%20Action%20in%20the%20health%20sector.pdf?dl=0

40 https://www.dropbox.com/s/8bz5uias5w74sdp/SHT_HospitalSafetyIndex.pdf?dl=0

41 https://www.dropbox.com/s/nykskx4ibska8uf/SelfAssessmentTool.pdf?dl=0

4.4 MINISTRY OF ENVIRONMENT AND FORESTRY

The ministry of Environment and Forestry, acts as the lead institution especially with respect to forest and bush fire as well as climate change and environmental pollution-related hazards and associated disasters.

Strategic Direction

In order to develop, protect, conserve forests and the environment, organizing the community in to developmental army and involving them in agro-forestry development will be important areas of emphasis. The contribution of the public, stakeholders and development partners in the sector's development will be promoted to realize economic and ecological benefits. Moreover, special emphasis will be given to women and youth mainly to ensuring their benefits from forestry development and natural resources conservation. Technological and technical support will be provided to pastoral communities to ensure that benefits from environmental and forest development activities are properly targeted. Moreover, favorable environment will be created for the private sector to play a role in modernizing the forestry sector. Efforts will also be exerted to improve or create forest products marketing chains and enhance their economic contribution in terms of value addition and employment generation.

To mitigate environmental pollutions which arise from urban expansion, change in life style and industrial growth, appropriate systems and measures will be established. Efforts will also be made to implementing Climate Resilient Green Economy (CRGE) at all levels.

Objectives

The main objectives of the sector during the GTP II period are:

- ensuring environmental safety in the course of rapid and sustainable economic growth (vision to become a lower middle income country by 2025);
- ensuring CRGE strategy is implemented in all sectors to increase socioeconomic and ecological benefits of forests through improved forestry development, conservation and utilization.

Implementation strategy

(a) Implementation capacity building program:

- strengthened capacity of relevant institutions in planning, implementing, monitoring, and evaluation of the sector
- establish environment and forestry structures across all regions, organizations and administrative level
- Support will also be given to effectively implement CRGE down to the grass root levels for all sectors or agencies.

- Identify regional capacity gaps and technical limitations, need assessment studies will be conducted.

(b) Building Climate Resilient Green Economy

- To enable each sector implement Green House Gas (GHG) emission reduction programmes
- support for the preparation of action plans and monitoring activities will be provided including sufficient budget and capacity building assistance to each sector, mainly, in the context of attaining emission reduction targets
- To mitigate climate change impacts, effective participation, plan integration and harmonization as well as necessary strategies will be formulated and implemented.
- Follow-up activities will be conducted on 20 nationally agreed climate change adaptation tasks.

C. Forestry development

- Strengthen forestry development, conservation and utilization at all levels
- Effective systems and strong collaboration will be created with institutions which provide education and training with particular focus on executive agencies.
- promote and disseminate knowledge and technology generated from need based research through demonstration and extension
- Participatory and decentralized systems of environmental and forestry development, conservation, utilization and safety measures will be prepared
- Adequate awareness raising activities on forestry policy, strategy and laws will be conducted for managers, experts and community members at all levels.
- Environmental impact assessment (EIA) will be conducted on new and on-going projects and strict monitoring and evaluation activities will be carried out to check whether or not projects are being implemented in accordance with environmental laws.

MAINSTREAMING DRM INTO THE ENVIRONMENT SECTOR

Step 1: Conduct Environment sector risk assessment

Conducting an environment sector risk assessment which will act as a baseline on the current status of the environment sector on mainstreaming DRM and will provide significant information on which locations in Ethiopia are most at risk. The risk assessment will also determine the set of key actions and lead to the development of the mainstreaming action plan (Step 4). Sectoral risk assessments ensures that decision-making processes and selection of key actions are risk-informed, and the government and its people are aware on the need to mainstream DRM into the environment sector.

Key Activities

1.1. Developed or enhanced risk assessment methodology which will be used by the environment sector

1.2. A complete, and comprehensive environment sector risk assessment is available and is accessible online

- Identified exposed elements relevant to the environment sector
- Socio-economic/natural/physical vulnerabilities
- Expected direct and indirect impacts of various hazards to the environment sector

Step 2. Evaluate the Environment Sector's capacity on Mainstreaming DRM

The evaluation of the sector's capacity on DRM will give us an understanding of the existing challenges, needs, gaps, and strengths of the environment sector on the key thematic areas of mainstreaming DRM, and identify institutional needs to support the mainstreaming process. This step will result in creating a capacity building strategy to ensure that the challenges and gaps are filled for the environment sector. This step feeds into the sector-specific mainstreaming DRM framework for Ethiopia and in the development of the mainstreaming action plan, and in the implementation and monitoring.

Key Activities

2.1. Evaluation of Ethiopia's status on mainstreaming DRM into the environment sector
2.2. Institutional training to increase capacity to support mainstreaming process
2.3. Enabling environment assessment on mainstreaming DRM
2.4. Identify sectoral analysis or assessment tools to support mainstreaming (ex. environmental impact assessments)

Step 3: Develop an environment sector specific mainstreaming DRM framework

This step seeks to strengthen the policy linkages between SPIF, GTPII and sector objectives, targets, and implementation strategy which will provide a platform to support risk governance in the sector and to establish a sectoral strengthened policy, legal and regulatory framework for mainstreaming.

Key Activities

3.1. Develop targets and indicators for mainstreaming DRM into the Environment Sector
3.2. Publish policy guidelines for mainstreaming DRM into the Environment sector
- Support the understanding of why we need to mainstream DRM
- Encourage government to take action to mainstream DRM

3.3. Identify practical entry points and key priorities for mainstreaming DRM for the sector

Step 4: Develop Mainstreaming Action Plan

Based on the outputs of steps 1 through 3, a mainstreaming action plan will be developed in-line with GTP II, SPIF, and environment sector strategies, targets, and implementation strategy.

Key Activities

4.1. Identify key mainstreaming actions for the environment sector based on risk-informed decisions (Step 1), evaluation (Step 2), and using the mainstreaming framework (Step 3).
4.2. Develop short and medium-term action plans on mainstreaming DRM for the environment sector

Step 5: Implementation and monitoring

This step is the implementation phase of the mainstreaming process. Once all previous steps has been accomplished, the initial implementation stage should begin from the practical entry point and key priorities for mainstreaming DRM and in-line with the Mainstreaming Action Plan.

Key Outputs

5.1. Implementation of initial steps for mainstreaming DRM
5.2. Progress monitoring methodology and plan for mainstreaming DRM into the environment sector developed, and implemented

Sector: Ministry of Environment, Forestry and Climate Change, Government of Ethiopia

INFORMATION	DETAIL
Sector	Ministry of Environment, Forestry and Climate Change
Responsibility[42]	Forest and bush fire as well as climate change and environmental pollution related hazards and associated disasters *Source: National Policy and Strategy for Disaster Risk Management*
Part B: Mainstreaming in Policy and Programmes	• Understanding Disaster risk • Tools for mainstreaming in Policy and Programmes • Key policies and programmes for mainstreaming DRR in Ethiopia • Process of mainstreaming in policy and programmes • Case Study: Outcome of mainstreaming in policy and programmes
Understanding Disaster risk on Natural Environment	**Drought and Ecological Degradation in Ethiopia** - Environmental Degradation - Land Degradation - Deforestation - Water resources degradation - Loss of biodiversity **Environmental Losses due to disasters** - **Factors Responsible** - Unwise use of natural resources poorly planned development projects, prompted by rapid population growth[43]

[42] https://www.dropbox.com/s/ellhj2s75244poq/Ethiopia_National%20Policy%20And%20Strategy%20on%20DRM%202014.pdf?dl=0
[43] https://www.dropbox.com/s/jrukdlpxglewr35/28392-31140-1-PB.pdf?dl=0

INFORMATION	DETAIL
	- Stochastic rainfall causes severe droughts at irregular intervals and these droughts threaten natural environment as well as the lives and livelihoods of millions of people[44]
Development Policy and Planning for environmental sector	10. Environmental Policy[45] 11. Environmental Impact Assessment Proclamtion No. 299/2002[46] 12. Ethiopia Programme of Adaptation to Climate Change 13. Climate-Resilient Green Economy (CRGE) – Green Economy Plan[47] 14. Growth and Transformation Plan II (GTP II) (2015/16-2019/20) – Environmental & Climate Change[48]
DRM Linkages to Key Development policies/strategies/ programmes	**9. Climate-Resilient Green Economy (CRGE) –** the government of Ethiopia has developed a strategy to build a green economy. Green Economy Plan is based on four pillars. I) Improving crop and livestock production practices for higher food security and farmer income while reducing emissions, ii) Protecting and re-establishing forests for their economic and ecosystem services, including as carbon stocks, iii) Expanding electricity generation from renewable sources of energy for domestic and regional markets, iv) Leapfrogging to modern and energy-efficient technologies in transport, industrial sectors, and buildings.[47] **DRM Linkages** Within the criteria for initiative assessment, food security issue due to drought of 2003 is clearly highlighted and the assessment of the green growth initiatives needs to reflect the breadth of concerns like flood security that guides the development of the green economy plan.[47] **10. Environmental** Impact Assessment (EIA) Proclamtion No. 299/2002 defines EIA as methodology identifying and evaluating in advance any effect, be it positive or negative, which results from the implementation of a proposed project or public instrument. According to this proclamation, Environmental Impact Study Report (EISR) shall be prepared and submitted to the Environment Protection Agency (EPA) by proponent who wish initiate new project with likely adverse impact of his project on environment.[46] Regarding the EIA process in Ethiopia, there are signs of a positive beginning, according to Girma Mikru, Head of the EPA's Economic and Social Affairs Department. For example, i) There are some indications that EIA is being applied on the ground. That is, some project owners, including

[44] https://www.dropbox.com/s/vehshlahrd3cobp/agec2004v030i001a003.pdf?dl=0
[45] https://www.dropbox.com/s/f1gq6euglgu9kzw/ethiopia01.pdf?dl=0
[46] https://www.dropbox.com/s/1xfspvt1ggqwh6l/ETH85156.pdf?dl=0
[47] http://www.undp.org/content/dam/ethiopia/docs/Ethiopia%20CRGE.pdf
[48] https://www.dropbox.com/s/6exq1r9nja1yrfg/GTP2_English_Translation_Final_June_21_2016.pdf?dl=0

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	government agencies, have begun to bring their Environmental Impact Study Reports (EISR) to the EPA and regional organs, ii) Experiences are beginning to accumulate from current engagements in EIA activities. Especially at the Federal level, the number of applications made by project owners or EIA proponents is increasing year to year, etc.[49] Ato Solomon Kebede, an official at the Environmental Protection Authority, identified other promising developments. (Solomon,2006). For example, i) There is growing concern over EIA among officials from sectoral agencies, which has been witnessed in public discussions with the sectoral agencies and policy makers, ii) Sectoral agencies that have established environmental monitoring units have strengthened their EIA capacity, iii) The Development Bank of Ethiopia has made EIA a requirement for credit purposes; i.e., it loans money to investors only after they present the approved review of the EISR, making it a pioneer in greening its credit policy, and iv) The Ethiopian Floriculture Association has developed a Code of Conduct that requires EIA for the purpose of accessing the EU market successfully.[49] **Gaps & challenges**[49] **-** Even though EIA has been introduced as a legal requirement, it is seldom enforced. That many development initiatives and investment projects are causing huge damage to the forest and wildlife resources of the country indicates the absence of effective EIA process. There are various gaps and challenges that hinder the effective enforcement of EIA. Some of the gaps and challenges are as follows. The EIA system in Ethiopia is ineffective due to following reasons/factors: i) There is a gross lack of awareness and widespread misconceptions among the main actors in EIA process in Ethiopia. Some even consider it as obstacle to development activities. ii) EIA needs an extensive human and resource capacity, which is lacking in the major implementing organs of the EIA system. iii) The EIA Proclamation is a framework law that needs specific regulations, directives or guidelines. Legally speaking, there are no regulations or other specific rules to support the implementation of the EIA Proclamation. The procedural and review guidelines prepared by the EPA are still at their draft stage, leaving the EIA Proclamation ineffective. There are no guidelines for the registration, accreditation and certification of for those who give consultancy service on the preparation of EISR. iv) A lack of legal and institutional arrangements for effective coordination and communication among the regional and sectoral offices has created a great deal of confusion in the EIA process. Furthermore, the EIA lacks power commensurate to its extensive regulatory

[49] https://www.dropbox.com/s/uagpwwqqmtavpih/overview-of-eia-book-html.pdf?dl=0

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	functions. It is crippled without a mechanism to compel private or public development proponents, who by and large refuse to submit their projects for the EIA v) A shortage of the time allocated for the review process makes the review of the EISR very superficial vi) The government has shown a lack of political will to implement EIA law relative to its commitment to pursue policies for investment and economic growth; a belief which is born out by the fact that investment laws have gained strength, while the EIA process has been legally weakened **DRM Linkages** The EIA Proclamtion No. 299/2002 has nowhere mentioned any climate or disaster risks component. For example, in the description of Environmental Impact Study Report, minimum description has no sub-section on DRM. **11. Environmental Policy**[45] The overall policy goal is to improve and enhance the health and quality of life of all Ethiopians and to promote sustainable social and economic development through the sound management and use of natural, human-made and cultural resources and the environment as a whole so as to meet the needs of the present generation without compromising the ability of future generations to meet their own needs. **DRM Linkages** i) The risk of recurrent drought has been clearly highlighted in the introduction section on "Resource Base and Need for Policy. It says " Agriculture has also been the main source of the stagnation and variability in GDP growth caused in the main by policy failures and exacerbated by recurrent drought, civil war, natural resource degradation, and poor infrastructure".[45] ii) Moreover, within the section on "Sectoral environment policies for sustainable husbandries and sustainable agriculture", it says "The policies are to promote in drought-prone and low rainfall areas water conservation which is as important as physical soil conservation for more secure and increased biomass production, including crop production.[45] **12. Forestry Development - Growth and Transformation Plan II (GTP II) (2015/16-2019/20) – Environmental & Climate Change**[48] Efforts will be made to increase forest contribution to the economy and ecology, through sustainable development and conservation activities. Accordingly, through initiating identification, demarcation, registration and protection of forest resources and also undertaking research-based forestry development; the national forest coverage will increase from 15.5% in 2015/14 to 20% by the end the GTP II period. Systems and measures will be developed on environmental rights, forestry devolvement and conservation.[48] **DRM Linkages**[48] To strengthen forestry development, conservation and utilization at all levels; relevant training, education and research needs will be identified and provided. Effective systems and strong collaboration will be created with institutions which provide education and training with particular focus on executive agencies. Actions will be taken to promote and disseminate knowledge and technology generated from need based research

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	through demonstration and extension. Moreover, to assist and coordinate need based forestry development and conservation, research centres and laboratories will be established. Disease and pest control measures will be undertaken specifically on imported tree seeds and forest products. Challenges arising from pest, disease, forest fire, invasive species and climate change related hazards will be mitigated through applying research findings.[48]
Mainstreaming DRM/R into Environment sector in Ethiopia	iii) **Promote the use of Wereda Disaster Risk Profile data and information for implementation of CRGE – Vision** The Wereda Disaster risk profile clearly provides data and information on factors that are responsible for affecting food security at the wereda level. The factors include hazard related characteristics, including drought; how drought and other related hazards affect Livelihood, Occupation and Source of food; Crop Production; Livestock Production and Access to Markets and Credit; among others. The information and data can be very useful for implementation of CRGE – Vision, especially in the Criteria for initiative assessment of food security that will guides the development of the green economy plan. While developing CRGE, the Environmental Protection Authority and the Ethiopian Development Research Institute can use the Wereda Disaster Risk Profile data and information on food security in Ethiopia by having a long-term partnership with the National Disaster Risk Management Commission (NDRMC) on technical assistance for addressing the food security component of CRGE. **iv) Promote the use of DRR into the EIA (i.e. Environmental Impact Study Report)** As a starting point, the current sections of the Environmental impact study report can be reviewed to integrate DRR into relevant sections. The report consists of 8 sections: i) the nature of the project, including the technology and processes to be used; ii) the content and amount of pollutant that will be released during implementation as well as during operation; iii) source and amount of energy required for operation; iv) information on likely trans-regional impacts; v) characteristics and duration of all the estimated direct or indirect, positive or negative impacts; vi) measures proposed to eliminate, minimize, or mitigate negative impacts; vii) contingency plan in case of accident; and vii) procedures of self-auditing and monitoring during implementation and operation. As an example, the Department of Environment and Natural Resources, Republic of Philippines has successfully integrated DRR/CCA into EIA Technical guidelines by reviewing and updating following sub-sections: i) Environmental Impact Statement Screening Forms, and ii) Initial Environmental Examination Checklist.[50]

[50] https://www.dropbox.com/s/r92p4rp9rh48igq/DRR-CCA%20EIA%20Technical%20Guidelines.pdf?dl=0

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Case Study	**Priority Implementation Partnership (PIP) on Mainstreaming DRR into Environmental Management in the Philippines**[51] In 2011, the Environmental Management Bureau (EMB), Philippines, produced technical guidelines for incorporated DRR and CCA into the Philippines Environmental Impact Statement (EIS) process. In 2012, ADPC initiated a partnership with the EMB and the National Disaster Risk Reduction and Management Council, to undertake three activities over the period 2012 -2014 focusing on capacity building and awareness raising for DRR-enhanced environmental management. These include: preparing a research report of experiences implementing the DRR- and CCA-enhanced EIS in key sectors; preparing recommendations for policy for improving this process; and preparing and delivering training on implementing DRR- and CCA-enhanced EIS for stakeholders of the EIS process. **EMB Integrates Disaster Risk Reduction and Climate Change Adaptation in the Environmental Impact Assessment (EIA) Requirement in the Philippine EIS System**[52] The Philippine Environmental Impact Statement System (PEISS), being a planning tool for incorporating environmental management concerns in proposed development projects, has been specifically identified as an entry point of considering climate change risks and formulation climate change adaptation in planning development initiatives at the project level. Likewise, in the light of the current disaster events, there is a realization of the importance of considering disaster risks in project planning and development and the PEISS has been identified as one of the government processes where these concerns should be tackled. Hence, EMB Memorandum Circular 2011-005 on Integrating DRR/CCA concerns in the PEISS was issued in November 2011. The Memorandum Circular is intended to enhance the PEISS into a risk-based planning and management tool in addition to it being a tool for incorporating environmental management concerns in project planning and implementation. Since then, a number of projects which used the Technical Guidelines on Integrating DRR/CCA concerns in the EIA have been issued ECC and are currently being implemented. With the assistance from the Asian Disaster Preparedness Center (ADPC) implementation of EMB MC 2011-005 is currently being assessed through the study of actual project in order to enhance its effectiveness.

[51] https://www.dropbox.com/s/ngxxn7ozxphirg7/2013-p63Vn0-ADPC-ADPC_Annual_report_2012_Final_Print_Rev4.pdf?dl=0

[52]https://www.dropbox.com/s/shy7k86vf5bw3j3/EMB%20Integrates%20Disaster%20Risk%20Reduction%20and%20Climate%20Change%20Adaptation%20in%20the%20Environmental%20Impact%20Assessment%20%28EIA%29%20Requirement%20in%20the%20Philippine%20EIS%20System..pdf?dl=0

4.5 THE MINISTRY OF EDUCATION

The Ministry of Education is the lead institution with respect to measures necessary to be taken before, during, and after the disaster period to prevent any hazards and related disasters from interrupting the normal teaching learning process as well as regarding mainstreaming of disaster risk management into school curricula and integrating it into studies and researches conducted by research and higher learning institution levels.

Strategic Direction

The main strategic direction that will be pursued during GTP II to improve educational participation, quality and relevance at all education levels are implementing educational development army package in a coordinated and organized manner, expanding functional adult education and providing special support for emerging regions for equity in access to education are t. In general, the second growth and transformation plan considered and mainstreamed all relevant elements of the post-2015 development agenda and Agenda-2063 with regards to education and technological development.

Objectives

The main objective of the education sector development plan is to ensure effective and efficient education and training system that enhance quality, relevance, equity and access at all levels. This will be achieved through building sectoral implementation capacity and the development and adherence to competency criteria.

Implementation strategy

(a) General education

Improve access to primary and secondary education to all and to expand education, government capacity building and good governance programs coupled with full community participation for sectoral development will be designed and implemented.

Accordingly, facilitating policy based services, maintaining quality education, provision of materials that support performance, implementing education quality package and developing the standards and follow up activities will be carried out. Besides, functional adult education will be expanded across the country. To improve the quality and relevance of education, the education development army package will be fully implemented in a coordinated and organized manner and functional adult education will be expanded as well as the number of teachers from emerging regions will be increased. Addressing the shortage of teachers across the county and linking the curriculum with technology, sustainable development and national and international partnership principles is expected improve the quality of education

With respect to general education, although the key issue is about quality, there are still issues which need special emphasis with regard to coverage. During the GTP II period, all efforts will be exerted to increase expansion of secondary schools. Similarly, priority will be given to pre-primary education and adult education. On the other hand, to improve educational quality, measures will be taken to enhance the quality and number of teachers and schools during the plan period. The government will continue to enhance the quality of educational program at all levels. Since the key objective of higher education is to produce highly skilled, qualified and competent citizens to support the rapid economic growth and social development, the government will continue its effort to maintain the momentum to ensure the quality of higher education. Private investors will be encouraged to participate extensively in the education sector. The necessary support and appropriate monitoring will be made to ensure that standards and requirements are met.

(b) Technical and Vocational Education and Training

In order to render the development process fast, sustainable and fair, as well as to supply the required human power and technology, results based training will be implemented strictly in each focus area. The public, the private sector and other actors will work in a coordinated manner to ensure that the chamber of industries will take the task of future occupational standard development and certification. The existing TVET institutions program is one component of the government capacity building program and its main mission will be expanding micro and small scale enterprise, creating job opportunities and training middle level human power needed by the industries. Certified graduates of regular and short term trainings will be encouraged to save initial capital, be organized in groups and develop project proposal to form small enterprises and check their professional competence through assessment to sell their technology enable them prove that TVET institutions are hatching centres of new technologies.

C. Higher Education

The number of public higher education institutions and their admission capacity will be increased. In order to improve the achievement of preparatory secondary school students admitted to higher education, universities and preparatory secondary schools will work in collaboration mainly with emphasis on improving the achievements in mathematics and science subjects. In addition, during the next five years, training programs will focus on science and technology fields and its quality will be improved in efficiency to bring them on par with similar institutions in other countries. Special support will be given to science and technology universities and selected technology institutions. Quality higher education system will be built by improving the system of leadership and management of universities and by giving training for Ethiopian students and teachers.

Regular Support will be provided to private higher education institutions to increase their admission capacities. In order to achieve the target of teachers' capacity building, the

expansion of post graduate programs will be implemented at the centre. System will be designed for certification of university teachers and implemented. National higher education research directive and framework focused on technology transfer will be developed and implemented jointly with the Ministry of Science and Technology. National higher education leadership development will be organized. Outcome based and efficient budget allocation system will be designed and implemented. A framework for national higher education institutions' international partnership and collaboration will also be developed. The establishment of research universities will be implanted based on international standards criteria and their teaching and learning process will be linked with their mission of knowledge development and technological innovation. To build modern structure and system in higher education institutions, the existing reform activities will be sustained suitably as an institutional culture. In addition to the expansion of public higher education institution, efforts will be made to maintain and improve its quality.

MAINSTREAMING DRM INTO THE EDUCATION SECTOR

Step 1: Conduct education sector risk assessment

Conducting an education sector risk assessment which will act as a baseline on the current status of the education sector on mainstreaming DRM and will provide significant information on which locations in Ethiopia are most at risk. The risk assessment will also determine the set of key actions and lead to the development of the mainstreaming action plan (Step 4). Sectoral risk assessments ensures that decision-making processes and selection of key actions are risk-informed, and the government and its people are aware on the need to mainstream DRM into the education sector.

Key Activities

1.1. Developed or enhanced risk assessment methodology which will be used by the education sector

1.2. A complete, and comprehensive education sector risk assessment is available and is accessible online
- Identified exposed elements relevant to the education sector
- Socio-economic/natural/physical vulnerabilities
- Expected direct and indirect impacts of various hazards to the education sector

Step 2. Evaluate the Education Sector's capacity on Mainstreaming DRM

The evaluation of the sector's capacity on DRM will give us an understanding of the existing challenges, needs, gaps, and strengths of the education sector on the key thematic areas of mainstreaming DRM, and identify institutional needs to support the mainstreaming process. This step will result in creating a capacity building strategy to ensure that the challenges and gaps are filled for the education sector. This step feeds into the sector-specific mainstreaming

DRM framework for Ethiopia and in the development of the mainstreaming action plan, and in the implementation and monitoring.

Key Activities

2.1. Evaluation of Ethiopia's status on mainstreaming DRM into the education sector
2.2. Institutional training to increase capacity to support mainstreaming process
2.3. Enabling environment assessment on mainstreaming DRM
2.4. Identify sectoral analysis or assessment tools to support mainstreaming

Step 3: Develop an education sector specific mainstreaming DRM framework

This step seeks to strengthen the policy linkages between SPIF, GTPII and sector objectives, targets, and implementation strategy which will provide a platform to support risk governance in the sector and to establish a sectoral strengthened policy, legal and regulatory framework for mainstreaming.

Key Activities

3.1. Develop targets and indicators for mainstreaming DRM into the education Sector
3.2. Publish policy guidelines for mainstreaming DRM into the education sector
- Support the understanding of why we need to mainstream DRM
- Encourage government to take action to mainstream DRM

3.3. Identify practical entry points and key priorities for mainstreaming DRM for the sector

Step 4: Develop Mainstreaming Action Plan

Based on the outputs of steps 1 through 3, a mainstreaming action plan will be developed in-line with GTP II, SPIF, and education sector strategies, targets, and implementation strategy.

Key Activities

4.1. Identify key mainstreaming actions for the education sector based on risk-informed decisions (Step 1), evaluation (Step 2), and using the mainstreaming framework (Step 3).
4.2. Develop short and medium-term action plans on mainstreaming DRM for the education sector

Step 5: Implementation and monitoring

This step is the implementation phase of the mainstreaming process. Once all previous steps has been accomplished, the initial implementation stage should begin from the practical entry point and key priorities for mainstreaming DRM and in-line with the Mainstreaming Action Plan.

Key Outputs

5.1. Implementation of initial steps for mainstreaming DRM
5.2. Progress monitoring methodology and plan for mainstreaming DRM into the education sector developed, and implemented

Sector: Ministry of Education, Government of Ethiopia

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Sector	Ministry of Education
Responsibility[53]	Shall be a lead institution with respect to measures necessary to be taken before, during, and after period to prevent any hazards and related disasters from interrupting the normal teaching learning process as well as regarding mainstreaming of disaster risk management into school curricula and integrating it into studies ad researches conducted by research and higher learning institutions levels. *Source: National Policy and Strategy for Disaster Risk Management*
Part B: Mainstreaming in Policy and Programmes	• Understanding Disaster risk • Tools for mainstreaming in Policy and Programmes • Key policies and programmes for mainstreaming DRR in Ethiopia • Process of mainstreaming in policy and programmes • Case Study: Outcome of mainstreaming in policy and programmes
Understanding Disaster and climate risk to education sector	**Impact on children and Education**[54] • The education system is heavily impacted when flooding destroys schools and droughts force families to abandon their homes in search of food, water and protection. • Assessments indicate that more than 2 million primary school students have been affected by drought, floods, or conflict. Droughts trigger population displacement, in search of food and water, and as a consequence, children no longer attend school. • Children are missing out on up to 3 days of school a week (more than half of their normal attendance) as they support their families by fetching water, taking care of younger siblings, or taking livestock in search of water sources. • Inadequate feeding limits the level of children's attention in class. • Children are at high risk of dropping-out; and of being exposed to protection issues related to child labor, trafficking and exploitation. • During the past years, Ethiopia has made remarkable progress in primary school education. In order to maintain these achievements, partners are calling for increased funding for the education drought response. Interventions will have to include support for teachers, in order to avoid that teachers leave their positions because of the hardship caused by the drought.

[53] https://www.dropbox.com/s/ellhj2s75244poq/Ethiopia_National%20Policy%20And%20Strategy%20on%20DRM%202014.pdf?dl=0
[54] http://educationcluster.net/country-coordination/high-priority-countries/ethiopia/

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Development Policy and Planning for Education Sector	**15. Growth and Transformation Plan II (GTP II) (2015/16-2019/20) for Education** The GTP – II for education aims at Enhancing citizens' livelihoods by improving the quality and relevance of education with equal access and participation of citizens. It addresses the core issues, such as, accessibility, efficiency, equity, quality, capacity, and education in emergencies through achieving following key objectives: i) Increase preschool and primary school access and enrolment, ii) Expand adult education, iii) Increase secondary school enrolment rate, iv) Increase middle level trained man power, v) Higher student intake in higher education progrmmes intake capacity, vi) Increase postgraduate student intake level of higher education, and vii) Improve the quality of education. **16. Education Sector Development Programme V (ESDP V)[55]** The key priorities of ESDP V are: i) Provide equal opportunities and participation for all, with special attention to disadvantaged groups; ii) Deliver quality education that meets the diverse learning needs of all children, youth and adults; iii) Develop competent citizens who contribute to social, economic, political and cultural development through creation and transfer of knowledge and technology; iv) Promote effective leadership, management and governance at all levels in order to achieve educational goals by mobilising and using resources efficiently; and v) Assist children, youth and adults to share common values and experiences and to embrace diversity. These priorities will be achieved through following key priorities programmes: i) Capacity development for improved management, ii) General education: quality, iii) General education: access, equity and internal efficiency, iv) Adult and non-formal education, v) Technical and Vocational Education and Training, and vi) Higher education. **DRM-linkages:** **Education in emergencies** is one of the cross-cutting areas of the education sector development programme. It focuses two key components: i) Teachers' and leaders' development - Training and equipping school leaders in emergency-prone areas to respond effectively to crisis through Printing and distributing copies of '**Ethiopia: minimum standards for education and emergencies'**[56] to all region, zone and woreda education offices and TVET agencies; and ii) curriculum, teaching and learning materials – Equipping resource centres/clusters with materials for continued education in an emergency situation, developing standard package of 'emergency' teaching and learning materials, including WASH, distributing packages to all schools at risk of emergencies, including WASH.

[55] https://www.dropbox.com/s/3h1f840yhdhkb8d/2016-06-ethiopia-education-sector-plan-vi.pdf?dl=0
[56] https://www.dropbox.com/s/fgldjb1pn2lkg86/Ethiopia_MS_for_Education_v1.0_LowRes.pdf?dl=0

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	17. Education and Training Policy & its implementation, 2002[57] It is a comprehensive and coherent education policy that is in the service of development and democracy, to assess the problems of modern education in Ethiopia, to recommend solutions, and to broadly analyse all education related issues. Thus, it is developed to address following key issues of Ethiopian education system; namely, limited and inequitable access, Inequitable Distribution of School Services, Problem of Efficiency, Lack of Quality and Relevance, and Undemocratic Content. It focuses on six areas: curriculum and teaching affairs, education and assessment, education and language, education organization and finance, Educational logistics and issues of support and, Integration of education, training, development, and research. **DRM-linkage:** No or limited linkages. **18. Content and Pedagogical Standards for Geography Teachers in Ethiopian Secondary Schools (Grade 9-10), 2013**[58] The Geography teachers' professional standards presented in this document have been prepared using the generic standard as an overarching frame (a focus is put, nevertheless, on the first and second standards). It is equally important to mention that international experiences related to Geography standards have been thoroughly studied and integrated into the document. What is more, national policies directly related to Geography education (GTP, ETP, ESDPs, etc.) and the Geography syllabi for Ethiopian schools are carefully reviewed. **DRM-linkages:** Within Annex II - Geography in Ethiopian Schools' Curriculum: First cycle secondary level: Grade 10, to develop understanding and acquire knowledge of 'Reason for the occurrence of drought, and drought coping mechanisms' is the part of learning outcomes for grade 10 Geography, i.e., after completing grade 10. **19. Curriculum Framework for Ethiopian Education (KG – Grade 12)**[59] The curriculum framework was developed to address the problems on the different aspects of our curriculum especially in the areas of education materials, methodologies and assessment techniques. These problems were mainly attributed to the steady increase in the dropout rates particularly in the rural areas of the country. To address issues related to our education system, the Ministry of Education has developed a Framework for Curriculum Development. The framework covers pre-primary, primary, general secondary and preparatory levels of education.

[57] https://www.dropbox.com/s/mirxz4elp80gjnd/The%20Education%20and%20Training%20Policy%20and%20its%20Implementation.pdf?dl=0

[58]https://www.dropbox.com/s/6jsy988l9wcpbzn/Content%20and%20Pedagogical%20Standards%20for%20Geography%20Teachers%20in%20Ethiopian%20Secondary%20Schools%20%28Grade%209-10%29.pdf?dl=0

[59] https://www.dropbox.com/s/6s9nyylc7z08giv/Curriculum%20Framework%20for%20Ethiopian%20Education%20%28KG%20%E2%80%93%20Grade%2012%29.pdf?dl=0

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	It aims to reinforce the basic tenets and principles outlined in the Education and Training Policy. Subsequent curriculum materials development is based upon Active Learning methods and Competency-based approach. **DRM-linkages:** No or limited linkages **20. Pastoralist Area Education Strategy[60]** The strategy is designed for the Pastoralist areas that has suffered a long period of neglect and marginalization under past governments. Consequently, basic development infrastructures and social services, including education and training in these areas are very meager. Various research findings illustrate that the salient problems of pastoralists are closely associated with the socio-economic and natural environment they are found in. These include drought, poverty, school distance, harmful traditional practices, etc. When it comes to making quality education accessible to all citizens in pastoralist areas, it is imperative to design comprehensive strategies that objectively take into account the peculiar way of life, socioeconomic and natural environments of the pastoralist population. Indeed, one of the vital lessons learnt from past experiences is the impossibility of addressing the educational needs of pastoralist children through conventional schooling alone. This strategy would enhance primary and secondary education in the pastoralist areas of the country. The key objectives are: i) Expand access to equitable, quality and relevant Education in pastoralist areas with the active participation of the community; and ii) Bridge the huge gap of participation in Education that prevails between pastoralist areas and other parts of the country. **DRM-linkage: Limited or no linkages.** For addressing the environmental and economic constraints related to dropping-out of School, one of the key strategies suggested is to **expand school feeding program in areas of acute food shortage**, alongside with government's endeavors to make the community self-sufficient in food production, to deter students from dropping out of school, taking care that it does not lead to dependency syndrome.
Knowledge and Capacity Enhancement for DRM	**Ethiopia's undergraduate and graduate program on DRM at Bahir Dar University is an important mechanism to increase knowledge and capacity enhancement for DRM, and should be supported as a critical element of an overall national DRM strategy.** The Department of Disaster Risk Management and Sustainable Development (DRMSD) was developed within the Faculty of Agriculture and Environmental Sciences at Bahir Dar University (BDU) as a response to an identified need to build more resilient communities through strengthened capacity and sustainable development in Ethiopia. The three-year interdisciplinary undergraduate DRMSD curriculum was created in 2005 by a joint committee of experts (BDU, Save the Children/UK and Canada and DPPC).

[60] https://www.dropbox.com/s/x93stdinmc1840k/Pastoralist%20Area%20Education%20Strategy.pdf?dl=0

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	By strengthening and expanding upon the undergraduate DRMSD program at Bahir Dar University, USAID is funding an interdisciplinary Disaster Risk Science and Sustainable Development Masters of Science program. The curriculum is structured broadly to have both a proactive component that develops the skill to assess the underlying vulnerabilities of different livelihood systems, contributing to sustainable development, and a reactive component that addresses all stages of the disaster risk cycle. **Continued support for applied research and studies on DRM-related issues conducted by other Ethiopian research institutes** is important to further the DRM agenda in the country and to build capacity of local institutions. Such institutions include the Ethiopian Development Research Institute (EDRI) and the Ethiopian Institute of Agricultural Research (EIAR).
Mainstreaming DRM/R into Education sector in Ethiopia	• **Promoting schools to form clubs about disaster risk reduction:** The school club on DRR may promote DRR education in three areas – know about disaster (e.g. science behind natural hazards), prepare against disasters (e.g. class activities – disaster imagination games, hold a family DRR meetings; Domestic science - Clearing your surrounding with emergency bag making); think what you can do (e.g. Health and Physical - Prevention of injuries and First Aid; Social Studies - Our surroundings and livelihoods – Disasters and think about what you can do after evacuation; Integrated Studies - think about the disabled people). **School clubs in Ethiopia[61]:** School clubs are established to enhance the regular curriculum delivery through engagement in co-curricular activities, i.e. putting the theoretical and classroom based education into practice. The aim of school clubs is to solve social, cultural and economic problems faced by students and the local community. Various kinds of school clubs are organized in primary and secondary schools that commonly include environmental club, girls/ gender club, mininmedia club, HIV/AIDS club, civic and ethics club, charity club, etc. **Environmental Clubs:** Environmental science is given as subject at early grades of the education (from grade 1 to 4). In the later grades, it is integrated in subjects as social science, biology, chemistry, geography and civic education as subject matters. The club is key to coordinate environmental activities by adapting to the local context- assessing environmental challenges, identifying intervention mechanisms, translating theoretical understanding into actions in such a way that local environmental problems are mitigated. **These clubs can be used for the promotion or enhancement of knowledge about the disaster risk reduction.** • **Promote comprehensive school safety policy:** This may include create safe learning environments with safe location, construction and retrofit; Maintain safe learning environments with school disaster management; Protect educational access with continuity planning; Teach and learn disaster prevention and preparedness; and Build a culture of safety and inclusion. As discussed above,

[61] https://www.dropbox.com/s/j9pte1qunouzwid/ECO_School_Clubs_in_Ethiopia_BN.pdf?dl=0

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	Education and Training Policy & its implementation 2002 is a comprehensive and coherent education policy in Ethiopia that broadly analyse all education related issues. The DRR issues need to be discussed and integrated for developing a comprehensive school safety policy. Similarly, **Pastoralist Area Education Strategy in Ethiopia** designed for the Pastoralist areas that has suffered a long period of neglect and marginalization under past governments. Consequently, basic development infrastructures and social services, including education and training in these areas are very meager. Thus, it important that DRR issues and DRR strategies are included in the current development strategy for pastoralist areas. • **Promote safe school facilities:** This may include school buildings with multi-hazard features, DRR features, child friendly features, hygiene and nutrition features, environmentally friendly features. Maintenance of school buildings may include check-list and tools to maintain school facilities daily, weekly, monthly, and annually. Remedial Repairs & Maintenance (E.g. painting, roof coverings, roof structures, steel structures, Roof Fascias, Bargeboards & Exposed Roof Timbers, External Ceilings, Internal Ceilings, Walls and Floors, Doors & Windows, Electrical Installations, Plumbing Installations, and School grounds). **School Inspection handbook** or related documents in can be used for incorporating the above components for promoting the safe school facilities in Ethiopia. • **Promote school disaster management:** This may include Disaster and Emergency Preparedness Guidance for Schools by developing check-list for: i) Assessment and Planning; ii) Physical and Environmental Protection; iii) Response Capacity Development; and iv) Practicing, monitoring, and improving. • **Promoting child friendly schools infrastructure, standards, and guidelines:** This may include standard framework, planning, Standard – guidelines (e.g. Appropriate, sufficient and secure buildings, Healthy, clean, secure and learner-protecting environment, Child-friendly, barrier-free environment which promotes inclusive access and equal rights of every child, and Adequate and appropriate equipment that supports the level of education. • **Promote the development of technical guidance for integrating Disaster Risk Reduction in the school curriculum:** The guidance can be designed primarily for use by policy makers and curriculum developers in central and sub-national administrations as well as can also officer offer of direct relevance to school principals, teachers, teacher trainers and local education officials as well as local community members committed to fostering DRR learning. The guidance may include sections on – preparing curriculum framework for disaster risk reduction; Planning and processing DRR curriculum development, DRR learning outcomes, programmes, activities, materials, etc.; Applying changes in classroom and school; scaling up and DRR mainstreaming; monitoring of evaluating changes. As discussed earlier, the **Curriculum Framework for Ethiopian Education (KG – Grade 12) aims to** address the problems on the different aspects of curriculum especially in the areas of education materials, methodologies and assessment techniques. Moreover, and this framework is also considered as a blue print and provides guidance for the preparation of the subsequent curriculum materials notably syllabi, textbooks and also for the overall implementation of the teaching learning activities across the grade levels. Thus, framework can also provide technical guidance for integrating DRR into school curriculum in Ethiopia. • **The guidance for integrating Disaster Risk Reduction in the school curriculum may also include some key discussion tools and checklist.** For example, five dimension of DRR learning in the curriculum, ESDRR curriculum planning tools – Problem tree analysis,

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	objective tree analysis, Developing Competency-based Curriculum, Developing Subject-based DRR Curriculum Learning Outcomes, etc. Some checklist examples are: DRR learning outcomes, DRR student assessment, conducting an evaluation, etc.
Case Study	**Case Study 1: Disaster risk reduction awareness in schools in Malawi** **Abstract:** The education sector in Malawi has a pivotal role to play in conducting an effective community education and awareness campaign as part of disaster risk reduction mainstreaming work. Students of all ages can actively study and participate in school safety measures and contribute to community risk reduction work. While efforts are being made at policy level by the Department of Disaster Management and civil society networks to lobby for the incorporation of disaster risk reduction in school curricula, on the ground NGOs are working with district education and area offices to engage teachers and learners in disaster risk reduction awareness and mainstreaming. **Case study 2: Disaster Risk Reduction in School Curricula: Case Study from Nigeria** **Abstract:** In the education sector, disaster risk reduction is being mainstreamed into primary and secondary school curricula. The mainstreaming process is handled nationally by the Nigerian Education Research and Development Council (NERDC) and is an initiative of NEMA. The syllabus has been completed but government approval is still needed in order to commence its incorporation into courses in these educational institutions. Disaster risk reduction awareness and risk reduction activities are being included in lesson plans, though much remains to be done to integrate the curricula at the local level and to train teachers. The initiative is intended to build human capacity in disaster risk reduction through educating children to know what to do before, during and after disasters and thus to reduce loss of life as a result of disasters.

4.6. MINISTRY OF LABOUR AND SOCIAL AFFAIRS

Strategic Direction

The main strategic directions of the sub sector's development plan are closely monitoring working conditions based on protection so as to secure peaceful industrial relation at work places and expanding occupational safety and health services, strengthening bilateral and multilateral cooperation and social consultation systems, creating safe working condition, protecting illegal human trafficking and building institutional capacity.

Objectives

The main objectives the sub-sector's development plan are to ensure industrial security by creating safe working conditions and to balance demand and supply of the labour force through expanding employment and job market information services.

Major Targets

Through conducting research and studies, relevant policy and legal frameworks and action plans will be prepared and implemented. Employer and employee affairs proclamation will be revised to support fast industrial development and growth in the country by making the relationship between employer and employee more rational and developmental. Working conditions monitoring service will be strengthened to ensure the implementation of the law.

In addition, partnership and collaboration will be strengthened with partners and stake holders. Change army of the sector will be established. The security of industry will be maintained by addressing labour disputes though bilateral and trilateral dialogue and discussion systems. Efforts will also be made to increase productivity and competitiveness of markets by implementing technology efficiently and effectively.

MAINSTREAMING DRM INTO THE LABOR AND SOCIAL AFFAIRS SECTOR

Step 1: Conduct Sectoral risk assessment

Conducting a labor and social affairs sector risk assessment which will act as a baseline on the current status of the education sector on mainstreaming DRM and will provide significant information on which locations in Ethiopia are most at risk. The risk assessment will also determine the set of key actions and lead to the development of the mainstreaming action plan (Step 4). Sectoral risk assessments ensures that decision-making processes and selection of key actions are risk-informed, and the government and its people are aware on the need to mainstream DRM into the labor and social affairs sector.

Key Activities

1.1. Developed or enhanced risk assessment methodology which will be used by the labor and social affairs sector

1.2. A complete, and comprehensive labor and social affairs sector risk assessment is available and is accessible online

- Identified exposed elements relevant to the education sector
- Socio-economic/natural/physical vulnerabilities
- Expected direct and indirect impacts of various hazards to the education sector

Step 2. Evaluate the labor and social affairs sector's capacity on Mainstreaming DRM

The evaluation of the sector's capacity on DRM will give us an understanding of the existing challenges, needs, gaps, and strengths of the labor and social affairs sector on the key thematic areas of mainstreaming DRM, and identify institutional needs to support the mainstreaming process. This step will result in creating a capacity building strategy to ensure that the challenges and gaps are filled for the labor and social affairs sector. This step feeds into the sector-specific mainstreaming DRM framework for Ethiopia and in the development of the mainstreaming action plan, and in the implementation and monitoring.

Key Activities

3.4. Evaluation of Ethiopia's status on mainstreaming DRM into the labor and social affairs sector

3.5. Institutional training to increase capacity to support mainstreaming process

3.6. Enabling environment assessment on mainstreaming DRM

3.7. Identify sectoral analysis or assessment tools to support mainstreaming

Step 3: Develop an labor and social affairs sector specific mainstreaming DRM framework

This step seeks to strengthen the policy linkages between SPIF, GTPII and sector objectives, targets, and implementation strategy which will provide a platform to support risk governance in the sector and to establish a sectoral strengthened policy, legal and regulatory framework for mainstreaming.

Key Activities

3.1. Develop targets and indicators for mainstreaming DRM into the labor and social affairs Sector

3.2. Publish policy guidelines for mainstreaming DRM into the labor and social affairs sector

- Support the understanding of why we need to mainstream DRM
- Encourage government to take action to mainstream DRM

3.3. Identify practical entry points and key priorities for mainstreaming DRM for the sector

Step 4: Develop Mainstreaming Action Plan

Based on the outputs of steps 1 through 3, a mainstreaming action plan will be developed in-line with GTP II, SPIF, and labor and social affairs sector strategies, targets, and implementation strategy.

Key Activities

4.1. Identify key mainstreaming actions for the labor and social affairs sector based on risk-informed decisions (Step 1), evaluation (Step 2), and using the mainstreaming framework (Step 3).

4.2. Develop short and medium-term action plans on mainstreaming DRM for the labor and social affairs sector

Step 5: Implementation and monitoring

This step is the implementation phase of the mainstreaming process. Once all previous steps has been accomplished, the initial implementation stage should begin from the practical entry point and key priorities for mainstreaming DRM and in-line with the Mainstreaming Action Plan.

Key Outputs

5.1. Implementation of initial steps for mainstreaming DRM

5.2. Progress monitoring methodology and plan for mainstreaming DRM into the labor and social affairs sector developed, and implemented

Sector: Ministry of Labour and Social Affairs, Government of Ethiopia

INFORMATION	DETAIL
Sector	Ministry of Labour and Social Affairs
Part B: Mainstreaming in Policy and Programmes	• Understanding Disaster risk • Tools for mainstreaming in Policy and Programmes • Key policies and programmes for mainstreaming DRR in Ethiopia • Process of mainstreaming in policy and programmes • Case Study: Outcome of mainstreaming in policy and programmes
Development Policy and Planning for Social Sector	**21. National Social Protection Policy 2014**[62] The national social protection policy is designed to ensure fair and sustainable utilization of resources from the economic growth of the country and to reduce poverty significantly. It is designed to ensure social protection helps to reduce poverty and vulnerability with a meaningful impact to protect the poorest segments of society from falling deep in to destitution, to increase human development and productivity in order to break intergenerational cycle of poverty, to enhance equitable use of resources, to bring social justice and stable peace, to reduce discrimination and exclusion, to strengthen national feeling, and to enhance economic and social development. In general, to sustain social and economic development, and to boost social justice, to ensure the respect of dignity and rights of citizens. It aims to achieve all these by implementing following objectives: i) Protect the poor and vulnerable individuals, households, and communities from different natural and manmade adverse effects of shocks, ii) Establish social insurance system and increase its scope, iii) Increase access to equitable and quality health, education, and social welfare services to build human capital; iv) Expand and guarantee employment for the vulnerable to unemployment; v) Enhance employment guarantee for the segments of society under social problems through promoting employment opportunities; and vi) Ensure that the society at all levels play roles for the implementation of the policy. **DRM-linkage:** As underlined above, one of the key objectives of this policy is to Protect the poor and vulnerable individuals, households, and communities from different natural and manmade adverse effects of shocks. Moreover, the scope and focus of the policy also stresses on increasing access to social services and providing alternative care and support services for members of the society affected by economic shocks, natural and manmade calamities and those who require special support. The policy also gives due emphasis to segments of the society vulnerable to natural and manmade risks.

[62] https://www.dropbox.com/s/h8m2ycakfvyh0oo/National%20Social%20Protection%20Policy.pdf?dl=0

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	In term of implementation of the policy objective, PROMOTE PRODUCTIVE SAFETY NET is one of the key policy measures and strategies related disaster risk management. For instance, PSN aims to Expand social assistance coverage to ensure food security for the vulnerable exposed to natural and manmade calamities and protect them from falling in to extreme poverty. Part of the implementation strategy also focuses on Establish an early warning system to respond to disaster risk and vulnerability in accordance with the Disaster Risk Management Policy. **22. National Social Protection Strategy of Ethiopia 2016**[63, 64] The National Social Protection Strategy is developed to operationalise the vision, mission and objectives stated in the National Social Protection Policy and to establish a social protection system in the country. The strategic framework consists of five key areas: i) Coverage and targeting (including taking account of push and pull factors and guarding against double dipping), ii) Comprehensive and evolving support, iii) Graduation. Iv) Accountability and communications, and v) Mainstreaming of gender, age, disability and HIV. **DRM-linkage:** The strategy clearly provides key instruments and interventions for implementing the key objectives of the Productive Safety Nets, one of the key focus areas of the National Social Protection Policy. The interventions and implementation measures include i) Unconditional social transfers, ii) Conditional social transfers (non-work conditions), iii) Public works, iv) Scale-up safety nets and early warning systems for disaster response **23. Growth and Transformation Plan II (GTP II) (2015/16-2019/20) for Social Welfare** The GTP – II for Social Welfare and Labour Affairs major objective of social welfare sub-sector development plan is increasing the benefits of disabled and elderly people as well as citizens by expanding social security service coverage. Major targets aim to increase social welfare schemes, expand social security service, ensure social and health security for elderly, expand social services, increase in the elderly role in, development of the county and building democratic system. Increase in number of citizens who benefit from – social safety Net, psycho-social counselling and support services, etc. **DRM-linkages**: For promoting productive safety net, the GTP – II aims to ensure food security through increasing number people benefit from productive safety net programmes, increase in number of male and female headed households graduated from safety net programmes.

[63] https://www.dropbox.com/s/qu046inaxku378y/English%20NSPStrategy%20All.pdf?dl=0
[64] https://www.dropbox.com/s/dnzl4hupc1ms0mf/NSPS%20Final%20January%202016.pdf?dl=0

INFORMATION	DETAIL
	24. National Physical Rehabilitation Strategy 2011[65] National Physical Rehabilitation Strategy is an intervention that enlightens a systematic approach to help facilitate and promote the expansion of Physical Rehabilitation services in its quality and coverage in the country. The objective of this policy is to create common guiding instruments not needed in order to enhance and scale up the performance of the Government, Non-governmental organizations and other stakeholders working in this field, Organizations of People with Disabilities (PwDs) and the public at large in discharging their responsibilities in the provision of adequate and standardized services to PwDs. In order to achieve the above objective, the strategy is very useful by: i) Clearly defining the authority, responsibility and duties of the different stakeholders in addressing the issues of persons with physical disabilities, ii) Creating synergy among the different actors in addressing the issues of persons with physical disabilities, iii) Creating conditions for economic use of resources, iv) Helping concerned bodies to identify priority areas and act accordingly, v) Helping roll players to think strategically and formulate their plan of actions accordingly, and vi) Creating favourable ground for policy makers concerning PwDs. **DRM-linkages:** The strategy provides clear guidance on "what" are the major factors causing disabilities and also identifies major causes of disabilities in Ethiopia. For instance, 'Environmental Factor' is one of contributing factors causing disabilities in Ethiopia that includes epidemics, natural disasters, toxic waste and other hazardous substances. Strategy on "how to" address this factor has not been addressed comprehensively. **25. National Plan of Action on older persons (1998 - 2007) E.C[66]** This Plan has been developed to improve the standard and quality of social welfare service of Ethiopian older persons. It is prepared in line with the Millennium Development Goals (MDGs) with a view to contribute to poverty reduction, prevention and control of HIV/AIDS and improve the life of the society. This plan of action has set two priority directions which are interrelated: i) Development aspect of ageing and ii) Humanitarian aspect of ageing. It addresses 13 key issues - Health and wellbeing, Family and community care, Rights of the elderly, Housing and living environment, Social security, Education and training, Employment and income generation, Poverty reduction, HIV/AIDS, Gender and older Persons, Food and nutrition, Emergencies, and Protection of life and property. **DRM-linkages**: The objectives on emergences are: i) Preventing conflicts and emergencies, ii) Provision of basic necessities, protection of human rights of older persons during natural disasters and other emergency situations, iii) Enhance the contribution of older persons' in the rehabilitation activities of post emergency situation.

[65] https://www.dropbox.com/s/ntxhxywehxd388e/National%20Physical%20Rehabiltation%20strategy%20english.pdf?dl=0
[66] https://www.dropbox.com/s/evpjrate0dmmf4o/National%20Plan%20of%20Action%20Older%20Persons.pdf?dl=0

INFORMATION	DETAIL
	26. Ethiopia's National Plan of Action for Inclusion of Persons with Disabilities, 2010 - 2020
DRM Disaster Risk Management Principles for vulnerable groups	• DRM systems in Ethiopia will give due attention to especially vulnerable groups such as women, children, the infirm, people living with HIV/AIDS, the disabled and the elderly
Mainstreaming DRM/R for social protection in Ethiopia	• **Promote Trainings on Practical Disaster Risk Reduction (DRR) information and procedures to People with Disabilities (PwDs):** The overall objective may focus on promoting practical information and procedures to people with disabilities in Ethiopia. Training of Trainers (TOTs) may focus on disability awareness, how to train, practical DRR, and simple research and monitoring. Training at the community level includes safe-room settings in homes and the carrying out of relevant hazard drills and evacuation simulations. Training of trainers may utilize existing government structures for the delivery of DRR information. Government cadres, and Organisations of Persons with Disabilities, at the sub-national level are trained. These cadres then can train cadres at the village level. Cadres at the village level then train People with Disabilities (PwDs), their carers and neighbours. In Ethiopia, the **National Physical Rehabilitation Strategy 2011** provides direction for strengthening service delivery to PwDs scattered over big geographical areas in Ethiopia through strengthening as well as establishing more Physical Rehabilitation Service Centers (PRSC) in the country at the National, Regional and Zonal/Woreda echelons. Based upon on the need assessment and data collection, TOT for Promote Practical Disaster Risk Reduction (DRR) information and procedures to People with Disabilities can planned with at various level for the Physical Rehabilitation Service Centers in Ethiopia. • **Promote mainstreaming disabilities in small scale pilot projects related to building more resilient community**: It may include components related to improving access to drinking water through rehabilitating ponds or digging new ponds, improve the livestock for the poorest and more vulnerable households and provide drought resistant seeds for farmers. Persons with disabilities can participate side by side with their neighbours in digging ponds and rehabilitating roads and many of them could re-stock with goats. The people that could not physically carry out these rather heavy jobs could get other tasks or, one of their family members could work instead. In Ethiopia, projects related to food security and early recovery during the drought crisis can use such approach for promoting mainstreaming in small scale pilot projects. • **Promote guideline on inclusive Disaster Risk Reduction for disabled and elderly population:** It may include information about the persons with disabilities and older persons, inclusive DRR – including registry of people with disabilities, personal disaster preparation kit, twin track approach, standard operating procedures, etc., vulnerability and capacity assessment, shelter management, Early warning system, awareness raising and education activities, and search rescue and evacuation, making IEC material disability inclusive, etc.

4.7 Ministry of Urban Development, Housing and Construction

The Ministry of Urban Development, Housing and Construction is the lead institution with respect to urban infrastructure and building and other construction-related hazards and associated disasters and other urban disasters including fire.

Strategic Direction

The main strategic direction that will be pursued during GTP II to improve educational participation, quality and relevance at all education levels are implementing educational development army package in a The level of urbanization and urban development in Ethiopia is currently at its infant stage. This low level of urbanization would be taken as an opportunity to shape the inevitable urbanization to support the growth, industrialization and sustainable development agenda of the country. As this window of opportunity may not last long, it is critical to put in place a holistic urban development blue print to guide the sustainable urban development during the period of GTP II and beyond. The envisaged expansion of manufacturing and industrial development could not be thought of without sustainable development of urban centres. Hence, utmost emphasis will be given to the urban development process.

Accordingly, during the period of GTP II, ensuring sustainable urban good governance is going to be critical. Cities and towns will guide their development via urban plans that are well integrated with regional and national development plans and spatial plans. Moreover, by implementing fair and balanced settlement and by creating linkage among cities, the growth of urban centres will be ensured. The supply of land for different urban development programs will be executed in an utmost transparency, accountability and fairness. All urban development programs and resultant urban expansions should ensure equity of farmers and pastoralists by guaranteeing not only sufficient compensation but also rehabilitating such households to warrant better livelihoods afterwards. The direction of ensuring efficiency in land use is also emphasized as a key direction of GTP II. Different Strategic directions will be pursued to create conducive situation for financing, integrating and providing quality urban infrastructure that adequately support the envisaged rapid urbanization.

The other strategic direction that will be pursued is the strengthening of the on-going integrated housing program, in order to reduce the mismatch between housing demand and supply, to upgrade the urban centres, and to ensure sustainable development. Moreover, green development strategic direction will be pursued to ensure sustainable urban development and to speed up green economic development.

Objectives

The main objective of integrated housing development program is to improve urban housing provision and related challenges and to minimize the escalating housing demand by sustainable provision of housing and related services. A common platform will be created with concerned parties and institutions to facilitate the continuous provision and expansion of integrated urban infrastructure by strengthening infrastructure financing capacity and transferring skills and technology.

The other objectives of the sector is to ensure the use right of urban land by organizing and strengthening urban land information system with modern technology; and to realize urban development and urban good governance through active public engagement, building strong urban development army and labour-based approach to public works. The other objective is to develop and manage climatic resilient urban green infrastructure so as to create conducive working and living environment for citizens and to realize the vision of green economy as well.

Besides, to enable women, the youth, elderly people, children and the unemployed sections of the community to benefit from urban development activities and ensure their safety through introducing new occupational safety standards and strengthening the existing ones.

Other related objectives include: create urban development leadership at each level of urban administration; enable and support poor and food insecure section of the urban community to generate their own income and improve their livelihood; establish efficient and cost-effective urban planning and implementation system aimed at realizing the urban development and good governance objectives.

Implementation strategies

A. Scientific, Rational and Developmental Urban Leadership Building program

Strong urban leadership will be created that can make great achievements through mobilizing the community. Urban transformation army will also be continuously built to mobilize the public and ensure the urban transformation process. By supporting with modern information and communication technology, conducive environment will be created to achieve better performance in urban development and housing sector. Moreover, through creating new revenue sources and strengthening their revenue bases, cities will provide efficient, effective and equitable services and development.

B. Urban Development Safety Net Program

Efforts will be made to enable food insecure and venerable urban communities to generate their own income and improve their livelihood in the short term and on permanent basis.

C. Urban Good Governance and Capacity Building Program

Officials of the urban development sector will ensure the continuous satisfaction of the developmental investors and the public by delivering standard services. Standard methodologies will be established to evaluate the performance of service providers and the level of satisfaction of clients and the public at large. The level of satisfaction of the users will also be evaluated on an annual basis. Service providers will also be recognized on the basis of evaluation outcome. In addition, information technology based service provision system will be implemented.

D. Urban Planning and Implementation Program

Through promoting sense of ownership and participation of the community and by considering future development direction at different level of urban centres, integrated national and regional urban spatial plan will be prepared in all urban and rural development centres of the country.

E. Urban Land Development and Management Reform Program

Strategy for tackling finical constraints will be developed and implemented in order to develop urban expansion areas and upgrade slum areas of cities and reconstruction of old centres of cities and towns. Transfer and upgrading of private land landholdings to the lease system will be also implemented by facilitating different incentive mechanisms. Moreover, land tenure management system will be established to prevent illegal urban land holding practice and land related corruption. Based on modern land information system, urban land marketing centres will be established at federal level and regional states so as to stabilize land transaction system.

F. Housing Development and Management Program

New houses will be built in both urban and rural centres. Increasing the supply of quality and standardized urban housing and improved rural residential houses will be undertaken. Besides, based on government decision and by undertaking studies, strategies will be developed for private real states developers to supply housing units for low income groups. Similarly, equitable government housing management system will be established.

G. Integrated Urban Infrastructure Delivery Program

Standardized urban road infrastructure will be provided in urban centres. Through creating structural and organizational integration and establishing a common platform among concerned parties of infrastructure providers, successful urban transport, health and education services, water and sewage system, power and telecommunication infrastructures provision will be realized. Moreover, quality social and economic infrastructure will be built by taking social and environmental safety and security in to consideration.

H. Urban Green Infrastructure Development and Beautification Improvement Program

Through enhancing the awareness and participation of the community and stakeholders, and by using green infrastructure design criteria and standards of local development plan, it is planned to increase the coverage of green infrastructure and recreational areas in urban centres of the country. Moreover, by establishing solid waste collection and disposal system at all urban levels, urban solid waste collection and disposal converge will be increased. International best practices on the implementation techniques and organizational system of green infrastructure development and beautification will be taken as a bench mark to raise the awareness of the community.

I. Urban map production, Surveying and Land use right registration Program

Land registration system will be implemented to approve the land ownership and to curb corruption and illegal urban land holding practices. Moreover, by using recent technology, secured, improvable, complimentary legal cadastre, land registration and information transfer system will be introduced.

J. Urban Finance Development and Management Program

Limited availability of municipal finance has been identified as a major challenge facing urban development during the period of GTPI. Hence, during the period of GTPII, different strategies and financing options will be implemented to accelerate urban development. Urban centres will be strengthened to enable them diversify their revenue sources. Besides, the government will devise mechanisms to extend loans and subsides to further augment their revenue base and source of finance

MAINSTREAMING DRM INTO THE URBAN DEVELOPMENT, HOUSING AND CONSTRUCTION

Step 1: Conduct sectoral risk assessment

Conducting an urban development, housing and construction sector risk assessment which will act as a baseline on the current status of the sector on mainstreaming DRM and will provide significant information on which locations in Ethiopia are most at risk. The risk assessment will also determine the set of key actions and lead to the development of the mainstreaming action plan (Step 4). Sectoral risk assessments ensures that decision-making processes and selection of key actions are risk-informed, and the government and its people are aware on the need to mainstream DRM into the urban development, housing and construction sector.

Key Activities

1.3. Developed or enhanced risk assessment methodology which will be used by the urban development, housing and construction sector

1.4. A complete, and comprehensive urban development, housing and construction sector risk assessment is available and is accessible online
   - Identified exposed elements relevant to the sector
   - Socio-economic/natural/physical vulnerabilities
   - Expected direct and indirect impacts of various hazards to the sector

Step 2. Evaluate the urban development, housing and construction sector's capacity on Mainstreaming DRM

The evaluation of the sector's capacity on DRM will give us an understanding of the existing challenges, needs, gaps, and strengths of the urban development, housing and construction sector on the key thematic areas of mainstreaming DRM, and identify institutional needs to support the mainstreaming process. This step will result in creating a capacity building strategy to ensure that the challenges and gaps are filled for the sector. This step feeds into the sector-specific mainstreaming DRM framework for Ethiopia and in the development of the mainstreaming action plan, and in the implementation and monitoring.

Key Activities

2.1. Evaluation of Ethiopia's status on mainstreaming DRM into the urban development, housing and construction sector
2.2. Institutional training to increase capacity to support mainstreaming process
2.3. Enabling environment assessment on mainstreaming DRM
2.4. Identify sectoral analysis or assessment tools to support mainstreaming

Step 3: Develop an urban development, housing and construction sector specific mainstreaming DRM framework

This step seeks to strengthen the policy linkages between SPIF, GTPII and sector objectives, targets, and implementation strategy which will provide a platform to support risk governance in the sector and to establish a sectoral strengthened policy, legal and regulatory framework for mainstreaming.

Key Activities

3.1. Develop targets and indicators for mainstreaming DRM into the urban development, housing and construction sector
3.2. Publish policy guidelines for mainstreaming DRM into the urban development, housing and construction sector
   - Support the understanding of why we need to mainstream DRM
   - Encourage government to take action to mainstream DRM
3.3. Identify practical entry points and key priorities for mainstreaming DRM for the sector

Step 4: Develop Mainstreaming Action Plan

Based on the outputs of steps 1 through 3, a mainstreaming action plan will be developed in-line with GTP II, SPIF, and education sector strategies, targets, and implementation strategy.

Key Activities

4.1. Identify key mainstreaming actions for the urban development, housing and construction sector based on risk-informed decisions (Step 1), evaluation (Step 2), and using the mainstreaming framework (Step 3).

4.2. Develop short and medium-term action plans on mainstreaming DRM for the urban development, housing and construction sector

Step 5: Implementation and monitoring

This step is the implementation phase of the mainstreaming process. Once all previous steps has been accomplished, the initial implementation stage should begin from the practical entry point and key priorities for mainstreaming DRM and in-line with the Mainstreaming Action Plan.

Key Outputs

5.1. Implementation of initial steps for mainstreaming DRM

5.2. Progress monitoring methodology and plan for mainstreaming DRM into the urban development, housing and construction sector developed, and implemented

Sector: Ministry of Urban Development, Housing and Construction, Government of Ethiopia

INFORMATION	DETAIL
Sector	Ministry of Urban Development, Housing and Construction
Responsibility[67]	Shall be a lead institution with respect to urban infrastructure and building and other constructions related hazards and associated disasters and other urban disasters, including fire. *Source: National Policy and Strategy for Disaster Risk Management*
Part B: Mainstreaming in Policy and Programmes	• Understanding Disaster risk • Tools for mainstreaming in Policy and Programmes • Key policies and programmes for mainstreaming DRR in Ethiopia • Process of mainstreaming in policy and programmes • Case Study: Outcome of mainstreaming in policy and programmes
Understanding Disaster and climate risk to urban Development	**Urban Risk Profile** • Urban populations in Africa are affected by numerous disasters. These range from acute but infrequent events such as major floods, droughts and epidemics that can kill or injure large numbers of people, through to chronic and recurrent events that may affect only a few households or individuals at a time, but cumulatively have the greatest impact on poor people[68] • While large-scale disasters often receive media and policy attention, and generate support from governments and the international humanitarian community, small events seldom receive the same level of attention, and it is usually individual households or communities that are left to cope[68] • Urban risks in Ethiopia are increasingly becoming a concern due to increasing exposure to hazards and vulnerabilities in urbanized and rapidly urbanizing areas. • In Addis Ababa, Stormwater run-off has been increasing, resulting in more frequent flash floods and widespread disruption to the road network[69]

[67] https://www.dropbox.com/s/ellhj2s75244poq/Ethiopia_National%20Policy%20And%20Strategy%20on%20DRM%202014.pdf?dl=0
[68] https://www.dropbox.com/s/bmomw6cc41zymiu/actionaid_2016_-_strengthening_urban_resilience.pdf?dl=0
[69] https://www.dropbox.com/s/kz7w5360edgmhmj/Addis_Ababa_Resilient_cities_program.pdf?dl=0

INFORMATION	DETAIL
Development Policy and Planning for Urban Sector	**27. Growth and Transformation Plan II (GTP II) (2015/16-2019/20) for Urban Development & Housing** The goal or priorities of urban development in GTP-II is Improving urban livelihoods through: expansion of urban infrastructure, employment creation; expansion of the green economy and improvement of public service provisions. In order to achieve this goal, several implementation strategies are proposed, such as, Scientific, Rational and Developmental Urban Leadership Building program, Urban Development Safety Net Program, Urban Planning and Implementation Program, Urban Land Development and Management Reform Program, Housing Development and Management Program, Integrated Urban Infrastructure Delivery Program, Urban Green Infrastructure Development and Beautification Improvement Program; Urban map production, Surveying and Land use right registration Program; and Urban Finance Development and Management Program **DRM-linkage:** No or limited linkage. Disaster risks and related issues are not highlighted in the challenges and issues of urban development and housing in GTP-I as well as not in need for GTP-II. However, a study on Enhancing Urban Resilience for Addis Ababa by the World Bank clearly highlighted the primary shocks and stresses that the city faces, such as, flooding, urban fire, earthquake (i.e. Shocks); Unprecedented Urban Growth, water scarcity, unemployment and social vulnerability. It essential that these shocks and stresses are addressed in the urban development processes of newly or old urban areas that are prone to risk of hazards. **28. Urban Planning and Implementation Manual[70]** Review of urban planning practice in the country indicated that less than a quarter of the recognised urban centres have no plans to guide their spatial development. Even those that have plans have difficulty to implement the proposals. Apart from the pervasive issue of underdevelopment and poverty, the main factors that have had impact on the preparation and implementation of urban plans have been: i) lack of qualified personnel to prepare and implement urban plans; ii) lack of standards for planning; and iii) lack of proper legal frameworks for implementation. The manual address these issues by achieving following objectives: to guide the preparation of realistic and feasible urban plans that take into consideration local capacity and context, to indicate the procedures necessary in plan preparation and implementation, to show the types of services needed in different urban centres, to indicate methods of coordinating institutions of planning and implementation, Improving awareness about planning among professionals and the public, systematising plan preparation and implementation with a view to promoting relevance and implementability of plans, Increasing the efficiency of planning professionals by providing procedures for the planning processes, providing supplementary ideas for planning thereby alleviating lack of relevant reference materials on local planning contexts, and promoting the transparency of planning.

[70] https://www.dropbox.com/s/qyn73bdcwvr5fuw/Urban%20Planning%20and%20Implementation%20Manual.pdf?dl=0

INFORMATION	DETAIL
	DRM-linkages: "Natural Hazard area" is clearly highlighted in the manual as the area vulnerable to different hazards, such as, Seismic, Fault rupture, ground shaking, lateral spreading, etc., Geologic/Hydrologic, Debris avalanches, expansive soils, landslides, rock falls, etc., Erosion, river flooding, storm surges, etc., and Volcanic lava flows, mud flows, etc. In addition, specific planning measures are suggested, such as, Provide proper drainage network system for avoiding floods and storm water, which in all cases aggravate environmental degradation there by catastrophic events; "Avoid unplanned settlements on hazard-prone lands that are to contribute both environmental degradation and increase vulnerability to catastrophic events"; among others. **29. Integrated Urban Infrastructure and Services Planning Manual[71]** The manual provides a general road map of procedures and technical specifications that can assist urban infrastructure and services planners and implementers in their efforts to plan and provide effective and efficient infrastructure. The manual is envisaged to serve as a reference material primarily to urban infrastructure authorities and municipal planning units/departments involved in the planning and provision of urban infrastructure facilities. It also provides general technical information to urban authorities, planners, technicians, the private sector, investors and the community at large. **DRM-linkage:** No or limited DRM linkages. The procedure explained for preparing integrated Infrastructure and services Plan provides several provisions for integrating DRR into the planning, preparation, implementation, and monitoring steps. For instance, data collection and analysis, strategies, proposals, integrating proposals, implementation, monitoring and evaluation stages**.** **30. Manual for the Preparation of Social Development Strategy for Urban Vulnerable Groups[72]** The Manual is designed to provide local governments of urban areas with a useful reference and information to develop a Social Development Strategy for Vulnerable Groups and design a project in IDP framework. The Manual provides descriptions of resources that can help target community plan and develop partnerships and development projects and processes. It is a tool for thinking about, developing, implementing and evaluating the social development strategy for vulnerable groups. The manual is principally aimed to be used by: Local Authorities; NGOs; Community Based Organization; People who are interested in setting up community development interventions that address poverty, vulnerability and social exclusion; People who wish to make evaluation an integral part of development interventions; and Managers, strategic planners and policy makers seeking ways of promoting antipoverty work.

[71] https://www.dropbox.com/s/9476dzfbrrqc6ef/Integrated%20Urban%20Infrastructure%20and%20Services%20Planning%20Manual.pdf?dl=0
[72] https://www.dropbox.com/s/x92eqq0vtkp9k9k/Manual-%20Preparation%20of%20Social%20Development%20Strategy%20for%20Urban%20Vulnerable%20Groups.pdf?dl=0

INFORMATION	DETAIL
	DRM-linkages: No or limited DRM linkages. The procedure explained for preparing the **Social Development Strategy for Urban Vulnerable Groups** provides several provisions for integrating DRR into the preparatory work, data collection and analysis, strategy development, proposal development, integrating proposals, appraisal, implementation, and monitoring and evaluation stages.
Mainstreaming DRM/R into urban development sector in Ethiopia	• **Promote better understanding of Urban Vulnerable groups to natural hazard risks:** It may include reviewing the existing manual for preparation of social development strategy for urban vulnerable groups by introducing participatory methods and tools for the understanding of the urban risk (hazards, vulnerability, exposure elements; local community based strategy to address urban risk, etc. Further, promoting these measures into proposal development, integrating proposals, appraisal, implementation, and monitoring and evaluation. A study on Enhancing Urban Resilience: Addis Ababa by the World Bank[69] suggested that there is need for better understand vulnerable groups as there is evidence that the categorized approach to addressing social protection is ineffective because some people fall into multiple groups. Thus, the measure suggested that BOLSA to perform an extensive study of the most vulnerable groups in the city. • **Promote the integration of DRR into Integrated Urban Infrastructure and Services Planning Manual:** It may include reviewing the planning manual and introduce tools, methods, approaches, strategies to address urban disaster risks into the procedural part of the manual sections; namely, data collection and analysis, strategies, proposals, integrating proposals, appraisal and approval, implementation, and monitoring and evaluation. It may also include tools for urban disaster risk assessment, such as, hazard impact assessment, developing Simple Risk Maps, developing loss scenarios through simplified impact models, modelling disaster and climate Risk, Institutional and socio economic assessment. • **Review and enforcement of building codes and safety regulations[69]:** CityStrength Diagnostic carried out under the study on Enhancing Urban Resilience: Addis Ababa by the World Bank found that Informal settlements along the river banks are particularly vulnerable to seasonal flooding and drainage system overflow. It is estimated that about 5% of the city's residents are vulnerable to flood risk, and two-thirds of them live in simple mud and wood dwellings that are extremely vulnerable to flood damage. In addition to physical damage, these incidents have contributed to health epidemics in the city. In addition, as construction in Addis increases in pace and scale, the enforcement of existing building codes and safety regulations will be paramount. The construction practices do not adhere to basic standards and have low safety practices, resulting in many accidents at construction workplaces (construction sites, factories, etc.). Additionally, review and enforcement of building codes (including, for example, enforcing periodic inspection of sensitive electric installations) could have a substantial impact on reducing fire, earthquake, and flood risks. • **Promote initiatives that address localized flooding[69]:** As noted in the study findings on Enhancing Urban Resilience: Addis Ababa, Stormwater run-off has been increasing, resulting in more frequent flash floods and widespread disruption to the road network. Thus, it is recommended that AACRA prepares a Prepare a new urban drainage master plan and begin studying the link between solid waste management and flash flooding.

INFORMATION	DETAIL
	• **Promote the implementation of the Integrated Development Plan**[69]**:** The draft Plan is quite comprehensive and technically sound. The challenge is its effective implementation and prioritization of interventions for the short, medium, and long term, noted in the study findings on Enhancing Urban Resilience: Addis Ababa. Achieving the goal of a safe and liveable city requires coordinated action across multiple agencies in the city. it is suggested that Addis Ababa City Planning Project Office and Urban Planning Institute create an implementation 'business plan' and provide targeted support to sub-cities for the preparation of Local Development Plans.

4.8 MINISTRY OF TRANSPORT

The ministry of transport acts as the lead institution with respect to transport service related hazards and associated disasters.

Strategic Direction

In GTP II, it is planned to reduce transportation cost through creating an integrated system and increasing efficiency of transport services. It is also planned to enhance the capacity of the private sector to enable it play its role in providing transport services. Ensuring linkages between the ever growing major agricultural products to the major market centres, to enable agriculture and rural economy to expand its base and supply industrial input and thereby strengthen linkages to urban areas, expanding the accessibility of rural transport so as to link rural *kebeles* and *woredas* to market centres are the other focus areas of the sub sector. It is also planned to ensure that dry ports built in the country have the required quality, efficiency and generate economic benefits. To improve the standard of the transport corridors currently used for import and export products, expanding and enhancing their capacity are the other focus areas in the development of the sector. The other strategic focus of the sector is to fundamentally change the road traffic safety landscape of the country. To this end, road designs will consider the road traffic safety requirements. The transport management system will be improved to provide efficient and quality transport services at national, regional and city levels. The road, railways, maritime and air transport system will be expanded in an integrated manner. Expansion of transport infrastructure and services is planned to be undertaken through mainstreaming cross cutting issues.

Focus will also be given to maritime transport and logistics services given its key role in expanding manufacturing industry and export development. To realize its mission of creating modern information system, comprehensive, consistent, timely and accessible information will be provided to service providers and customers about the end to end shipping, logistics and support services.

Objectives

The major objectives of the transport and logistics subsector are to enhance availability, accessibility and quality of transportation services, reduce traffic accidents and property damage, support transportation of agricultural and industrial products to enhance their competitiveness in the global market, support private sector investment and trade activities, reduce the overall import and export transit time and associated cost.

Implementation strategy

The implementation strategies of the transport and logistics sector are: to enable the private sector participate in the development of ports in collaboration with the government to increase foreign exchange earnings and reduce expenditures by introducing systems, provide transport facilities in line with the demand for road transport, reduce waiting time of goods at ports, increase the number of marine workers and register ships owned by other countries, support the logistics system with modern technology, conduct problem oriented research and trainings, enable operators and institutions to provide knowledge based services, establish centre of excellence so as to enable the sector's regulatory institution equip them with the necessary knowledge, strengthen and expand the national logistic centres and improve the capacity of logistics service providers.

Besides, the following implementation strategies are designed to effectively implement the transport and logistics plan: establish the Ethiopian National Logistics Coordination Council (ENALCO) with the necessary legal framework, establish logistics Transformation Office (LTO), establish improved trade system, establish corridor facility and modern transit transport system, fulfil logistics infrastructure, establish information communication system, improve containerization procedure and implement ships registration policy, make the road traffic safety the main agenda of the political leadership at all levels, work in partnership with traffic police to improve the enforcement of road traffic laws, strengthen coordinated activities with stakeholders, improve the coordinated activities of the federal and regional transport organizations and working procedures, establish transport system to link major cities of the country and import freight transport vehicles with high loading capacity.

MAINSTREAMING DRM INTO THE TRANSPORTATION SECTOR

Step 1: Conduct a transport sector risk assessment

Conducting a transportation sector risk assessment which will act as a baseline on the current status of the education sector on mainstreaming DRM and will provide significant information on which locations in Ethiopia are most at risk. The risk assessment will also determine the set of key actions and lead to the development of the mainstreaming action plan (Step 4). Sectoral risk assessments ensures that decision-making processes and selection of key actions are risk-informed, and the government and its people are aware on the need to mainstream DRM into the transport sector.

Key Activities

1.1. Developed or enhanced risk assessment methodology which will be used by the transport sector

1.2. A complete, and comprehensive education sector risk assessment is available and is accessible online

- Identified exposed elements relevant to the transport sector

- Socio-economic/natural/physical vulnerabilities
- Expected direct and indirect impacts of various hazards to the transport sector

Step 2. Evaluate the Transport Sector's capacity on Mainstreaming DRM

The evaluation of the sector's capacity on DRM will give us an understanding of the existing challenges, needs, gaps, and strengths of the transport sector on the key thematic areas of mainstreaming DRM, and identify institutional needs to support the mainstreaming process. This step will result in creating a capacity building strategy to ensure that the challenges and gaps are filled for the transport sector. This step feeds into the sector-specific mainstreaming DRM framework for Ethiopia and in the development of the mainstreaming action plan, and in the implementation and monitoring.

Key Activities

2.1. Evaluation of Ethiopia's status on mainstreaming DRM into the transport sector
2.2. Institutional training to increase capacity to support mainstreaming process
2.3. Enabling environment assessment on mainstreaming DRM
2.4. Identify sectoral analysis or assessment tools to support mainstreaming

Step 3: Develop a transport sector specific mainstreaming DRM framework

This step seeks to strengthen the policy linkages between SPIF, GTPII and sector objectives, targets, and implementation strategy which will provide a platform to support risk governance in the sector and to establish a sectoral strengthened policy, legal and regulatory framework for mainstreaming.

Key Activities

3.1. Develop targets and indicators for mainstreaming DRM into the transportation sector
3.2. Publish policy guidelines for mainstreaming DRM into the transportation sector
- Support the understanding of why we need to mainstream DRM
- Encourage government to take action to mainstream DRM

3.3. Identify practical entry points and key priorities for mainstreaming DRM for the sector

Step 4: Develop Mainstreaming Action Plan

Based on the outputs of steps 1 through 3, a mainstreaming action plan will be developed in-line with GTP II, SPIF, and transport sector strategies, targets, and implementation strategy.

Key Activities

4.1. Identify key mainstreaming actions for the transport sector based on risk-informed decisions (Step 1), evaluation (Step 2), and using the mainstreaming framework (Step 3).
4.2. Develop short and medium-term action plans on mainstreaming DRM for the transport sector

Step 5: Implementation and monitoring

This step is the implementation phase of the mainstreaming process. Once all previous steps has been accomplished, the initial implementation stage should begin from the practical entry point and key priorities for mainstreaming DRM and in-line with the Mainstreaming Action Plan.

Key Outputs

5.1. Implementation of initial steps for mainstreaming DRM

5.2. Progress monitoring methodology and plan for mainstreaming DRM into the transport sector developed, and implemented

Sector: Ministry of Transport, Government of Ethiopia

INFORMATION	DETAIL
Sector	Ministry of Transport
Responsibility[73]	Transport service related hazards and associated disasters *Source: National Policy and Strategy for Disaster Risk Management*
Part B: Mainstreaming in Policy and Programmes	• Understanding Disaster risk • Tools for mainstreaming in Policy and Programmes • Key policies and programmes for mainstreaming DRR in Ethiopia • Process of mainstreaming in policy and programmes • Case Study: Outcome of mainstreaming in policy and programmes
Understanding Disaster and climate risk to transportation sector	**Vulnerability of Roads to Disaster and Climate Change**[74] • Temperatures are projected to rise across the Africa continent and very high temperatures can result in the softening and rutting of asphalt roads • Some parts of Africa will see an increase in precipitation, which can lead to reduced load-carrying capacity and lifespan of roads. Many parts of Africa will face more intense precipitation, which can increase flooding frequencies. These floods can overrun and erode roads, particularly unpaved roads (e.g., Niang et al., 2014). • Some recent literature also provides insights about the potential economy-wide implications of severe climate events that affect the road network, particularly implications for food security. For example, in Burkina Faso, maize price volatility is found to be greatest in remote (poorly connected) markets (Ndiaye, Maitre d'Hôtel, and Le Cotty, 2015). As climate change further reduces connectivity, this raises the potential for food shortages and economic shocks to vulnerable areas. • The road network in Addis Ababa is vulnerable to gridlock, particularly at peak hours. There are some key points of high traffic congestion, but much of the network is susceptible to delays caused by lack of traffic management, breakdowns, or accidents. Even

[73] https://www.dropbox.com/s/ellhj2s75244poq/Ethiopia_National%20Policy%20And%20Strategy%20on%20DRM%202014.pdf?dl=0
[74] https://www.dropbox.com/s/osmsq1rbsiavelt/110137-WP-PUBLIC-ECRAI-Transport-CLEAN-WEB.pdf?dl=0

INFORMATION	DETAIL
	minor accidents can cause substantial disruption to traffic flows, delaying the arrival of emergency services. Currently, transport development plans and regulations do not include such risk analysis.[75] • There is a strong dependency between roads and urban drainage, as existing and new roads interrupt natural drainage patterns. Run-off has been increasing due to the increased area of hard landscape. Flooding causes significant but short-lived disruption to the road network, as a result, congestion and delays tend to increase during the rainy season.[75] • At present, road transportation infrastructure is funded from the city's own budget. Generally, the city does not include resources for road maintenance; it is sourced from the national Road Fund, whose allocation to Addis Ababa is generally inadequate for comprehensive maintenance. It is recommended that the city supplements maintenance resources from the Road Fund with its own resources.[75]
Development Policy and Planning for Transportation Sector	**31. Growth and Transformation Plan II (GTP II) (2015/16-2019/20) for Transportation** Under GTP – II, the goal of transport priority is to "Facilitate the economic growth and development through: expansion of integrated road, railway, air and water transport infrastructures with the appropriate standard and quality" The major objectives of the road sector development plan will be expansions of road infrastructures, upgrading and improving the standards of the existing roads, reducing transportation cost and thereby support acceleration of economic growth and development. **DRM-linkage:** The disaster and climate risks are not mentioned in the GTP's strategic directions, major objectives, and implementation strategies for road development in Ethiopia. However, implementation strategies provide some areas for DRR and CCA mainstreaming, for example, conducting detailed environmental impact assessment (EIA) before road construction projects are implemented, strengthen the participation of the people in the process of project pre-feasibility and feasibility studies, are the other strategies to be pursued in implementation of the road sector development plan. EIA with DRR and CCA components, pre-feasibility and feasibility studies with Disaster and climate risks are important entry points that can be explored further for mainstreaming DRR into road sector. **32. Road Sector Development Programme (1997 – 2007)[76]** The Road Sector Development Programme (1997 – 2007) was developed to achieve following objectives: i) Improving transport operating efficiency and reducing road transport costs for both freight and passengers so as to encourage production, distribution and export; ii)

[75] https://www.dropbox.com/s/dy9tm9x7bea1r1p/Addis_Ababa_Resilient_cities_program.pdf?dl=0
[76] https://www.dropbox.com/s/hsxdz5mifu2u5ld/RSDP%20Original%20_2_.pdf?dl=0

INFORMATION	DETAIL
	Providing access to rural, other neglected and food deficit areas to - support efficient production, exchange and distribution throughout the country; and exploit the utilisation of the vast natural resources of Ethiopia which are unexploited; and iii) Developing institutional capacity of the road sub-sector at central and regional levels. It addresses following key issues: i) insufficient maintenance, the effects of armed conflict, excessive overloading, and road management institutional changes; ii) road network is limited in terms of both coverage and quality; iii) policies were not favourable to private contractors and consultants; iv) highest accident rates; v) no effective policy for enforcing environmental protection measures; vi) lack of proper government controls and enforcement of axle load legislation; vii) limited network coverage; viii) Community participation in all aspects of mitigating the travel demands at the local level has not been given due attention; ix) limited availability of functioning equipment and plant due to low budgets and poor management; x) no network planning approach and programming procedures; xi) capacity building both for ERA and RGRRO in line with the goals of RSDP is one of the crucial issues **DRM-linkages:** One of the strategic objectives of the RSDP was to construct the new regional and major link roads and providing access to neglect and drought prone areas. The absence of construction and upgradation of regional roads led to loss of thousands of lives because of the difficulty encountered in transporting food and medical supplies to drought-stricken areas of the country. Within the definition road maintenance, emergency maintenance works included needed in emergency cases, like the occurrence of slides, floods etc. Within environmental protection section, the issues related to environmental disasters (deforestation, erosion of bare soil and generally the disturbance of several ecosystems) due to past road construction projects has been clearly mentioned and Appropriate attention will be given in locating off-road traffic, road-works deposits, camps and workshops with special emphasis in areas of national parks and wet lands. **33. Transportation Policy of Addis Ababa[77]** The general objective of the Addis Ababa City Transport Policy is: i) To provide safe, efficient, comfortable, affordable, reliable and accessible transport service for the urban dwellers; ii) To enable the sector to provide for the socio-economic development, good governance, improve the livelihood of the society and adopt environmental protection of the city; iii) To enhance the status of the city as international seat, by introducing seamless traffic flow through modern traffic management system. The policy addresses following key issues in transportation sector: i) Poor coordination between the city's urban development and road transport plans, ii) Infrastructure related issues (e.g. Shortages of road network with respect to the size of the city, Poorly designed road junctions, etc.; iii) Issue of public transportation services (e.g. In-sufficient public transport service provision and limited coverage to main roads only, etc.; iv) Issues of traffic rules enforcement (e.g. Low level of awareness and

[77] https://www.dropbox.com/s/vzo4lv70h8b4twa/Transport%20Policy%20of%20%20Addis%20Ababa.pdf?dl=0

INFORMATION	DETAIL
	publicity in traffic system for road users, Absence of emergency and incident management, etc.); v) Issue of Environmental protection (i.e. Absence of legal limits and effective control over air and noise pollution). **DRM-linkages:** The policy promotes i) **Traffic safety** by - efficient traffic flow, safe, and comfortable transport service in the city, mitigating congestion and traffic accident in the city, etc.; ii) **Environment protection** by - establishing clean, healthy and safe transport system; mitigating the influence of transport infrastructure construction, maintenance and service on environmental protection; encourage application of transport technologies that use renewable energy source and that are fuel saving; iii) **Social Development** - Based On the objective of government's responsibility to address vulnerable section of the society exposed due to natural or manmade calamities, the transport and traffic management system shall address the needs of the disabled, children, women and the elderly
Mainstreaming DRM/R into Transport sector in Ethiopia	**Promote the use of DRR into EIA or Feasibility study for Transport related infrastructure, including roads:** This may include capacity building of officials from Ethiopian Roads Authority responsible for conducting feasibility studies or EIA on how to integrate DRR. It can also include reviewing and updating sections, such as, Environmental Impact Statement Screening Forms, Initial Environmental Examination Checklist, etc. **Promote Transport Planning with disaster risk as separate criteria for appraising and evaluating the project:** This may include best practices on tools for the mapping of natural hazards in the areas where road projects are going to be designed or implements. Selection of the projects can be made if they consider any DRR measures into design and implementation plan. The Wereda Disaster risk profile of NDRMC provides comprehensive useful information about the natural hazards risk at the wereda level and it can be used by ERA and relevant transport agency to know the households' accessibility to roads and urban centers in the disaster prone Wereda as well as road accidents information. **Promote the local approaches to mitigate the effects of disasters on the transport network:** It may include promoting local authorities to interact and share information on regular basis so that similar level of resilience can be achieved. Local authorities and communities should understand the risks affecting their infrastructure and what infrastructure is critical in their community. Workshops between local critical infrastructure representatives and asset owners to assess critical assets, interdependencies, service restoration time frames, and the impact of hazards on the local system, can provide invaluable information. This information should be stored and used for future local planning assumptions and also shared with emergency responders so they understand where the priority infrastructure lies and how much time they have to respond before the infrastructure collapses.
Case Study	**Disaster Risk Reduction and the Road Network, The Philippines, ADPC** The Philippines is exposed to many natural hazards- typhoons, floods and earthquakes mean the road network also has a high degree of exposure to landslides, road slips, embankment scouring and other geotechnical hazards. Road closures are common, disrupting both the movement of passengers, goods and services, affecting communities and well as negatively impacting on the country's economy and infrastructure.

INFORMATION	DETAIL
	The road sector was considered a priority for mainstreaming disaster risk reduction by the Regional Consultative Committee (RCC) on Disaster Management. Against this background, a partnership was developed between the Philippines National Disaster Coordinating Council (NDCC) and the Philippines Department of Public Works and Highways to implement DRR on the road network in the Philippines. The partnership was technically supported by the Asian Disaster Preparedness Centre (ADPC) with financial support from UN International Strategy for Disaster Reduction (UN/ISDR) through Swedish International Development Cooperation Agency (SIDA). A Technical Working Group was set-up with multi-agency membership to steer the project and provide the technical inputs needed. The basic approach was to 1) look at the existing procedures followed with regard to DRR and road projects, especially with regard to the feasibility and preliminary stages. 2) analyse the damage to road infrastructure from disasters. 3) Identify steps for incorporating DRR in project developments and 4) Review the future priority needs for road construction projects. A short report was published about the strategy and actions they have carried out, and are working towards, to achieve these aims. It was entitled "Towards Mainstreaming Disaster Risk Reduction into the Planning Process of Road Construction". This case study provides a summary of the main points. **POLICIES, INSTITUTIONS AND PROCESSES** **- Liaise with a large number of stakeholders, programs, projects and agencies** – The report recognised that mainstreaming DRR concerns into the road sector involves a number of stakeholders and interrelated plans and programs, including: road maintenance investment programs, road improvements, seismic vulnerability assessments, technical assistance for risk assessment and management, monitoring and evaluation of roads, studies on sediment related disaster on national highways, and hazard mapping and assessment for community disaster risk management programs. - **Improve Environmental Impact Assessments (EIA**) - The previous EIA report structure considers the impact of hazards by defining an "environmentally critical area" of the project site where it is frequently visited by the natural hazards. However, it does not explicitly provide details on how to address natural hazard vulnerability and risks to infrastructure and the consequent impact from its damage or failure. **FINANCIAL ARRANGEMENTS AND INCENTIVES** - **The report advises that by considering risks at an early stage, there is the potential for cost-savings.** For example, the alignment of roads that avoid areas of high landslide risk may avoid costly stabilisation techniques that would have not otherwise been identified until geotechnical investigations were carried out at the detailed design stage (RCC, 2008). It also points out that national budgets do not always provide funds for surveys and investigations at the feasibility study stage, and it is therefore unusual for disaster risk reduction measures to be incorporated at early stages of project preparation. The cost-benefit analysis was also found not to be comprehensively considering DRR. **OPERATIONS AND MAINTENANCE** - The key recommendation was that the key to successfully integrating disaster risk reduction on road projects lies in the planning phase of the project cycle, which includes project identification and preparation of the feasibility study. 'Feasibility reports should include an assessment of the impact of potential disasters' and 'DPWH needs to have a standard on project identification and preparation procedures to eliminate quality discrepancies between nationally and externally funded projects and to pave the way for mainstreaming disaster risk reduction in road projects' - Overall it was found that typically due to lack of funding for construction of national road projects, the Department of Public Works and Highways administers a basic feasibility study, but for foreign-assisted projects the

INFORMATION	DETAIL
	assessment process is more in-depth and extensive. It was also noted that externally funded projects are prepared to higher standards, particularly in relation to environmental assessments (where disaster risk aspects are described if required by the particular agency) and resettlement planning. It was reported that the road studies undertaken did look at hazards, but were primarily limited to protecting the road segments from geological hazards such as landslides and debris, and not comprehensive enough. - **Data, monitoring and risk assessment** It was reported that there was an uneven application of design standards between national and local roads, including an absence of one fixed format for collecting information on damage to roads and bridges from natural hazards. Hydrological data was available, but information was not uniformly processed to allow it to be used in road design (ADPC, 2008) (RCC, 2008). It was additionally noted that is important to benchmark hazard intensities with their return periods/damages, but this was difficult due to low resolution topographic maps, few hazard monitoring stations and a short monitoring period with limited processed data on hazards. The report recommended that the capacity of staff to assess the impact of disasters needs to be increased, particularly at regional and district levels.

Part 5: Case Studies

ANNEX – SUMMARY OF CASE STUDIES

NO.	TITLE	ORGANIZATION/COUNTRY
	Integrated Watershed Management in Harbu, Ethiopia	CRS/**ETHIOPIA**
	Accelerated Livestock Marketing To Boost Household Income Of Pastoralists During Drought: Commercial Livestock Destocking As A Drought Response	UNISDR/**ETHIOPIA**
	Reducing Disaster in Dire Dawa, Ethiopia Community managed disaster risk reduction in a river basin community	CORDAID/ **ETHIOPIA**
	Disaster risk reduction awareness in schools in Malawi	Economic Commission for Africa/ **Malawi**
	Institutionalization of risk management, pro-GRC/German Technical Cooperation (GTZ), Mozambique	UNDP and ECHO/ **Mozambique**

Original Title	**Integrated Watershed Management in Harbu, Ethiopia**	
Source	DeVoe, D. (Ed.) 2013. The Road to Resilience: Case Studies on Building Resilience in the Horn of Africa.	
Year of Publication 2013		Published by CRS Publishing
Abstract	Back in 2001 in the Harbu watershed of Ethiopia's northern Kalu district, environmental degradation could be seen in almost every direction. The hills were bare, with few plants or grasses growing on the steep slopes, which historically were green, fertile lands. This degradation came about over many years. As the region's population grew, farmers cleared away the natural forest to grow crops. They also cut trees for timber and firewood, resulting in extreme deforestation. Rains began to carry away the top soil as water rushed down hills. Farmers found it very difficult to keep rain-fed crops watered in these conditions. Yields dropped accordingly, a major concern for the majority of residents depending on subsistence agriculture for survival. Families could no longer produce enough sorghum for their needs, resulting in chronic food insecurity. In 2001, CRS joined forces with Water Action, local leaders and the local government agricultural office to implement an Integrated Watershed Management (IWM) project targeting 570 households in Harbu. Water Action is a local NGO with considerable experience in natural resource management, water supply and livelihoods. The project's objective was to work with the community **to reduce land degradation and the risks of drought.** At the start of the Harbu IWM project, the surrounding vegetation cover was estimated at just 7 percent. Now, long stalks of grass bend in the breeze on regenerated hillsides. Achieving this in just a few years was a significant accomplishment.	

1. What is presented - Integrated Watershed Management

- CRS joined forces with Water Action, local leaders and the local government agricultural office to implement an Integrated Watershed Management (IWM) project targeting 570 households in Harbu.
- Knowing that community involvement would be the key to success, project staff hosted community consultations to determine priority problems. Participatory tools used included a transect walk, trend analysis, key informant survey and focus group discussions.
- The need to increase harvests and access safe, clean water quickly rose to the top of the priority list. Women and children were traveling more than two miles to collect water from rivers and unprotected springs for drinking, cooking, cleaning and to water livestock.

- **Construction –** Project team and the community members decided to construct one small-scale irrigation scheme, build two new water supplies and rehabilitate selected degraded hillsides through area closures
- **Committees/Association/Groups** for community involvement - Watershed development committee, Irrigation water user association to oversee use of the irrigation scheme. Areas Closure management committees, two agro-enterprise groups, and two water and sanitation committees to collect fees and oversee maintenance of the water schemes.
- **Trainings -** Trainings were also held to increase committee members' skills in natural resource management, management of water supplies and irrigation schemes, maintenance, recordkeeping, agricultural production, postharvest crop management and agricultural marketing. In addition, project partners assisted the committees in developing by-laws, taught them how to enforce the bylaws and linked the committees with relevant government line offices for ongoing guidance and support.
- **Cash for work projects -** The Harbu community also implemented a number of soil and water conservation measures to further strengthen their resilience. Measures included physical interventions, such as hillside terracing, soil and stone bunds, check dams (small dams that slow water runoff and reduce soil erosion), gully rehabilitation, cut-off drains and micro basins to collect surface runoff. Community members also undertook biological measures, including planting trees, legumes and grasses to reduce erosion and stabilize the physical structures.
- The community also established a **cut-and-carry feeder system** once 80 percent of a degraded area rejuvenated. Residents living around the closed areas are not able to let their livestock graze freely, they can cut grasses from the protected areas to feed to their animals

2. What is achieved – Impacts and Results

- Sixty percent of project beneficiaries reported improvements in their overall living conditions, highlighting increased food security and incomes. Beneficiary households had more food, with annual food supplies increasing on average the equivalent of one month's worth of food.
- Farmers using the small-scale irrigation system earn three times the amount of farmers who are solely dependent on rain-fed agriculture.
- The Harbu watershed has significantly better vegetation cover, with coverage in protected areas increasing from 7 percent to 80 percent. Community members are still protecting the four closed areas and using grasses from these areas to feed their livestock.
- The small-scale irrigation scheme and two water supplies established during the project are still functional. These systems allow beneficiary families to be more resilient to drought compared with other families in areas where water systems have not been constructed.
- Forty-four miles of terraces on cultivated land has reduced soil erosion and increased water retention, leading to increased agricultural productivity. Project partners introduced improved varieties of sorghum, chick pea, pigeon pea,

groundnut and sesame, which further increase farmers' yields. Sorghum yield alone increased on average by 20 percent.

- The committees that oversee the irrigation scheme, water supplies, and closed areas are still functional, stable and strong many years after the project ended. Of the households surveyed, 82 percent said they felt these community institutions are doing a good job managing the water systems and closed areas.

3. Is this case promote mainstreaming DRR or Is it provides opportunity to mainstream DRR?

- **Drought risk significantly reduced through Integrated Watershed Management (IWM)** IWM strengthens DRRM efforts, drought and flood preparedness and mitigation and sustainable livelihood and food security and climate change adaptation.
- **Community Institutions are prepared in terms of knowledge and skills to address drought risk in future:** The community institutions are now more prepared to address the drought risk with their acquired knowledge by engaging them in trainings, project implementation and monitoring activities.

4. Way Forward: Operational Steps for Mainstreaming DRR

- **Promote Integrated Watershed Management in drought affected areas:** As mentioned earlier, IWM strengthen DRRM efforts, drought and flood preparedness and mitigation, it is essential that such project is pilot tested and implemented in drought prone areas. While selecting the project site for IWM, Wereda Disaster Risk Profile should be referred as it provides detail information on environmental characteristics, hazard characteristics, vulnerability, exposure information of each wereda.
- **Promoting Integrated Watershed Management Project for Sustainable agricultural development:** The project clearly demonstrates how IWM contribute in significantly better vegetation cover, increased agricultural productivity (increased farmers' yields, sorghum yield alone increased on average by 20 percent). Thus, it is important that such projects are linked and implemented under the GTP-II plan which aims to sustain agriculture development by expanding watershed management practices.
- **Promoting Integrated Watershed Management Project for Improved water resource management and utilization:** The project clearly demonstrate how IWS contribute in reduced soil erosion and increased water retention through implementing irrigation scheme successfully. Moreover, farmers using the small-scale irrigation system earn three times the amount of farmers who are solely dependent on rain-fed agriculture. Thus, such projects should be promoted and implemented under the GTP – II as the project contributes in improving water resource management and utilization

Original Title	**ACCELERATED LIVESTOCK MARKETING TO BOOST HOUSEHOLD INCOME OF PASTORALISTS DURING DROUGHT: Commercial Livestock Destocking As A Drought Response**	
Source	DROUGHT RISK REDUCTION FRAMEWORK & PRACTICES	
Year of Publication 2009		Published by UNISDR United Nations secretariat of the International Strategy for Disaster Reduction (UNISDR), Geneva, Switzerland, in partnership with the National Drought Mitigation Center (NDMC), University of Nebraska-Lincoln, Lincoln, Nebraska, U.S.A. August 2009
Abstract	Recurrent drought has a major impact on the vulnerability of Ethiopian pastoralists. It typically results in large livestock losses, reduced market prices and decreased household food security. A severe drought hit Ethiopia in 2006, during the first six months of which cattle prices decreased from 138 to 50 US dollars per head. The cattle prices were expected to continue falling as their conditions worsened. Many cattle were also likely to eventually die from lack of pasture and water. Save the Children/US, an international NGO, rapidly launched an accelerated livestock marketing initiative in the southern district of Moyale, near the Ethiopia-Kenya border. The initiative also known as **commercial destocking**, enabled pastoralists to receive cash in exchange for some of their animals, many of which were likely to die as drought conditions worsened. The pastoralists then used this money to purchase food for their families and hay and feed for their remaining livestock. An estimated 20,000 cattle valued at 1.01 million US dollars were sold. Some 5,400 households – about 30,000 people - participated in the initiative. Each household received, on average, 184 US dollars from the sale of cattle.	

1. What is presented - Pastoralist Livelihoods Initiative (PLI)

- **Programe:** Pastoralist Livelihoods Initiative (PLI) – a 2 years programme aimed to lessen the impact of drought. Funded by USAID
- **Location -** Southern District of Moyale, near Ethiopia-Kenya Boarder
- **Goal -** Mitigating the impact of drought and other shocks for pastoralists in Ethiopia through improved livestock-based relief and development
- **Methodology – Develop and Implement the destocking initiative**
  Save the Children/US worked alongside the Ethiopian Ministry of Agriculture and Rural Development and livestock traders to develop and implement the destocking initiative. To raise awareness about the initiative among livestock traders, the Ministry's Marketing Department held a meeting for traders involved in supplying livestock to local and export markets. The meeting was held in the capital, Addis

Ababa, and attended by over 40 traders. The Marketing Department and Save the Children/US also organized a familiarization trip so the traders could visit drought-affected areas.

- **Result -** In the end, only two traders decided to purchase the cattle. After purchasing over 6,000 cattle, each trader became eligible for an interest-free loan of 25,000 US dollars to help bridge a short-term gap in capital flow during the drought.
  Between 5 and 25 February, the traders purchased 6,292 male cattle. Many of the purchased cattle
  were highly emaciated. The two traders also influenced other commercial livestock traders to buy animals from the area. An additional 3,778 cattle were sold as a result, bringing total cattle purchases in February and March 2006 to 10,915. In total, some 20,000 livestock were removed from Moyale District during the 2006 drought.

2. What is achieved – Impacts and Results

- Destocking provided more than 50 per cent of household income during the drought. This income was used in very rational ways, mainly to meet immediate household needs and to protect assets. services. **This highlights the resulting support given to local markets,** which is required for post-drought recovery
- Destocking was considered to be the **most useful intervention** by participants
- A benefit-cost estimation comparing the cash benefits to pastoral households to the costs incurred by the implementing agency showed a **benefit-cost ratio of 41:1**
- All of the people who participated in the destocking initiative were able to buy their own food with the money obtained from destocking. They **no longer had to wait for food aid**, as they did during previous droughts.
- Participants saw clear **advantages of destocking over food aid**. They explained that money from destocking could be used to buy other things besides food, such as medicines and clothes.

3. **What are the challenges?**

- Poor infrastructure in pastoralist areas hinders market-led development
- Frequent customs and taxation points exist along the roads between drought-affected areas and holding areas for the animals. These fees added extra costs to the initiative.
- Finally, the limited number of holding grounds proved to be a constraint. In some cases, livestock in Moyale District become too thin and unfit for transport

4. Is this case promote mainstreaming DRR or Is it provides opportunity to mainstream DRR?

- **Awareness raising among the livestock traders about the drought impacts** on livestock by the Marketing Department of the Ministry of Agriculture and Rural Development was very crucial step taken to change the mindset of the livestock

traders and allow them to carry out destocking in the drought affected areas. For mainstreaming DRR, this step should be taken earlier before drought period so that traders take proactive steps to prevent situation where some livestock become too thin and unfit for transport

- **An interest-free loan of 25,000 US dollars to livestock traders:** Although out of 40 traders, only two traders decided to purchase the cattle, but such incentives are very effective if they introduced on right time and right place. Nevertheless, the traders were able to purchase around 10,915 cattle. For mainstreaming DRR, this kind incentive scheme should be promoted in drought prone areas before drought period start
- **Prevented the cattle loss and reduced the negative impact on the GTP planned targets and progress for livestock sector:** There was no data or estimation or forecasting on likely cattle loss with or without destocking. Nevertheless, Commercial destocking is a good practice because it provides pastoralists with cash from animals that are likely to die if left in the herd. For mainstreaming DRR, it is important that proper estimation of likely cattle loss is carried in drought prone areas under different drought scenarios so that commercial destocking can be planned at the right time and right place.

5. Way Forward for Ethiopia: Operational Steps for Mainstreaming DRR

- **Planning Destocking in early phases of drought:** Destocking should be considered at the earliest possible time, even before the official declaration of a drought. Destocking in early phases can provides pastorals twice the amount if destocking take place late. Ministry can plan destocking in early phases of drought by using wereda risk profile information and access key information about the livestock situation, including status of livestock disease, Veterinary Facility, livestock diversity, livestock ownership and changes, and pasture availability.

- **Build or raise comprehensive understanding about the livestock drought risk among the key stakeholders**: Comprehensive understanding about the livestock natural hazard risk should be properly shared for the planning and implementation commercial destocking early drought phase among the private livestock traders as well as pastoral traders' associations. Marketing Department of the Ministry of Agriculture and Rural Development should make use of wereda risk profile information for marketing commercial destocking among traders where it is mostly needed.

- **Develop Incentives and schemes for livestock traders as well as pastoral community for promoting destocking in selected areas:** The schemes and incentives should be designed in the early phases of drought. Therefore, certain budget amount should be allocated for developing incentives and schemes for livestock traders as well as for pastoral community.

- **Suspend Frequent customs and taxation fees** at the points exist along the roads between drought affected areas and holding areas of animal: The custom and

taxation fees add extra cost to the initiatives. Thus, if such cost is suspended temporarily, it will encourage more private traders to participate in commercial destocking.

- **Infrastructure Development for Destocking:** Without proper infrastructure support destocking cannot take place, for instance, the appalling conditions of the roads in some districts reduced the coverage of destocking after 2006 drought. Line sector, such as, road department should carefully understand the needs for road from hazard risk, vulnerability, and exposure aspect before selection and implementation of road development project.

- **Promote the schemes for Restocking of livestock in drought recovery**: The ministry should also provide incentives that help pastoral community to restock livestock during disaster recovery as well as provide supply of improved livestock feed.

- **Increase the Supply of improved livestock feed in the severely drought prone areas:** As mentioned earlier the wereda risk profile provides key information about the situation of livestock feed in various wereda. The information can help ministry in planning the supply of improved livestock feed in areas that requires urgent attention.

Original Title	**Reducing Disaster in Dire Dawa, Ethiopia** ***Community managed disaster risk reduction in a river basin community***	
Source	CORDAID (DUTCH CATHOLIC ORGANIZATION FOR RELIEF AND DEVELOPMENT AID)	
Year of Publication 2010		Published by CORDAID (2010) CASE STUDY CMDRR IN DIRE DAWA, ETHIOPIA. CLIMATE CHANGE ADAPTATION CONFERENCE 2010
Abstract	Flash floods occurred in urban Dire Dawa in Ethiopia in '45, '77, '81, '97, '01, '04, '05, and '06. The increase in frequency of the floods especially in the last decade can be caused by climate change. Rains are heavier than before. During the last flash flood in 2006, 256 people were killed, 244 disappeared and 10,000 were displaced. There was a large loss of houses, infrastructure and livelihoods. After the flood of 2006, first relief was provided and after that the Community Managed Disaster Risk Reduction (CMDRR) process was started. The initiative known as CMDRR enabled community to carry out DRR activities in Dire Dawa; namely, Community Risk Assessment, established Self Help Groups (SHGs), rehabilitation of hills, diversification of people's livelihood, and Early warning system. The initiatives encouraged government to take DRR initiatives and as a result During the flood in 2010 no lives were lost. It further demonstrates of what is achieved is the best way to influence actors like the government.	

1. **What is presented - Community managed disaster risk reduction (CMDRR) in a river basin community**

- **CMDR & Risk Assessment & action Plan** The CMDRR process in Dire Dawa consisted of several activities. First, there was capacity building of riverine communities, consisting of training them in CMDR and making a risk assessment and action plans with them. Through this process, the communities' attitude changed. They now felt more joint responsibility for communal vegetation on hills.
- **Self Help Groups** Efforts were undertaken to conserve the environment and saving groups of women were established to improve the economical resilience of the community. The SHGs saved money and took loans.
- **Rehabilitation of Hills** The hills were rehabilitated by the community. With the money allocated by CORDAID through JeCCDO implementation, the community built stone bund terraces and planted seedlings and transferred them to the hill. Within two years, the community managed to rehabilitate the hills that we had left ragged and barren. The terraces kept the water from running down the hills thereby preventing erosion and allowing water to percolate.'
- **Livelihoods** The rehabilitation of the hills in its turn helped to diversify people's livelihoods to make them more resilient to the floods. With the growing of plants including grass, the hills began to look green again.
- **Improved Livestock and agriculture practice.** Community members approached JECCDO to give us loan to buy improved breed cows so that they can take

advantage of the grass that has grown on the hill. Our proposal was accepted and we got cows on loan from Addis-Alem CBO which JECCDO had organized earlier. Thirty members were organized under a cooperative and they now have 20 cows. They sell the milk in the town to hotels and the town dwellers. Community also grow vegetables and fruits such as oranges and papaya.

- **Early Warning** Another risk reduction measure was the creation of a community based flood early warning system. This system consisted of mobile communication with upstream communities on information about rainfall or floods occurring upstream. Also, measures were taken to reduce the runoff water from the hills. The water was diverted to farms. Through this, vulnerability to flood was reduced.
- **Role of the Government** The government was invited and visited the areas in which the CMDRR process was going on to see how the communities had improved their situation through their own efforts. This motivated the government to discuss DRR plans and options with the community. The Mayor allocated a huge sum of money for the rehabilitation of Gara Dalu Hill.
- **Lobby** This involvement of the municipality is a very strong point in this CMDRR process. For instance, the municipality supported the construction of a 420-m long flood retention wall to protect farms along the river. This was partly because of the lobby of the community.
- **Changes in the decision making in city administration.** The lobby also helped in influencing the decisions, for example, land allocated for the construction of houses along river was canceled and left free, since the risk of flood is too high in this area.

2. What is achieved – Impacts and Results

- During the flood in 2010 no lives were lost
- Participation of a broad spectrum of members in risk assessment and action planning strengthens positive long term results
- Bottom up planning/community led/strong leaders are needed for positive long term results. This creates ownership and good possibilities for the community to link with the government
- Demonstration of what is achieved is the best way to influence actors like the
- government. In this case financial support for the plans of the community was gained
- Cooperation with the municipality can bear great results
- Regional forum was established that works with upstream as well as downstream communities.

3. Is this case promote mainstreaming DRR or Is it provides opportunity to mainstream DRR?

- Community risk Assessment and action planning helped community members to identify risk (hazard, vulnerability, and exposure) and built their capacity in

implementing DRR measures. Such risk assessment findings are very useful in designing any community development projects as well as can be very useful to local government in developing policies, plans, and projects.

- The CMDRR activities by the community influenced and encouraged municipal government to under DRR activities, such as, rehabilitation of Gara Dalu Hill, construction of a 420-m long flood retention wall, etc.
- The CMDRR activities strengthen community lobby and helped in influencing the decision making in city administration. Land allocated for the construction of houses along river was canceled and left free as the risk of a flood is too high in this area.

4. Way Forward for Ethiopia: Operational Steps for Mainstreaming DRR

- **Promoting the development and use of disaster risk profile, including community risk assessment profiles in the development of municipality plans:** The municipal government should promote the development of disaster risk profile, including community risk assessment profiles. In addition, such profile information should be discussed and shared before planning any community infrastructure project or any big or small infrastructure project in the city
- **Promoting the allocation of specific budget for DRR activities:** The city administration should allocate certain budget for DRR activities, such as, Rehabilitation of Hills, construction of flood retention wall, community early warning, etc.
- **Promoting the schemes or incentives for Self Help Groups (SHGs):** The city administration should promote schemes or incentives to strengthen Self Help Groups in the community. The incentives should encourage SHGs to work and implement DRR related activities in the community.
- **Strengthening/Promoting SHGs in municipalities or Weredas that are highly prone to the risk of natural disasters:** GTP – II on women and child development aims at increasing economic benefit for women. In next five years (2015/16 to 2019/20), this will be realized through number of women benefited from self-help organizations. Having more SHGs in disaster prone areas will benefit in two ways: Strengthening DRR in the community and aching the objectives of the GTP – II on women and child development

Original Title	**Disaster risk reduction awareness in schools in Malawi**
Source	United Nations Economic Commission for Africa (2015) Assessment report on mainstreaming and implementing disaster risk reduction in Southern Africa. Economic Commission for Africa

Year of Publication 2015		Published by Economic Commission for Africa
Abstract	The education sector in Malawi has a pivotal role to play in conducting an effective community education and awareness campaign as part of disaster risk reduction mainstreaming work. Students of all ages can actively study and participate in school safety measures and contribute to community risk reduction work. While efforts are being made at policy level by the Department of Disaster Management and civil society networks to lobby for the incorporation of disaster risk reduction in school curricula, on the ground NGOs are working with district education and area offices to engage teachers and learners in disaster risk reduction awareness and mainstreaming.	

1. What is presented - Disaster risk reduction awareness in schools

- Education sector has a pivotal role to play to ensure effective community education and awareness in DRR mainstreaming work.
- Efforts are made at policy level by the Department of Disaster Management Affairs and by civil society organization networks to lobby for the incorporation of disaster risk reduction into school curricula, on the ground NGOs are working with district education and zone offices to engage teachers and learners in DRR awareness-raising and mainstreaming.
- Students of all ages can actively study and participate in school safety measures, and effectively contribute to community efforts towards disaster risk reduction. Students are participating via DRR clubs and DRR sports and quiz competitions. DRR-related games were also developed to help students interact and learn more about disaster risk reduction from games. This strategy is contributing to the creation of both a culture of safety and a proactive generation.
- Integrating disaster risk reduction into schools will help raise awareness and provide a better understanding of disaster risk reduction for children, teachers and communities.

2. What is achieved – Impacts and Results

- Primarily, the initiative is helping promote the involvement of the education sector in DRM and CCA-related work at community level, thereby promoting effective community awareness and education in DRR mainstreaming work
- Process is providing opportunities to civil society organizations for evidence-based advocacy work for the inclusion of DRR and CCA-related work into school curricula

3. Is this case promote mainstreaming DRR or Is it provides opportunity to mainstream DRR?

- Forming of school clubs about disaster risk reduction promotes ownership of initiatives by schools, teachers and learners. This process provides ways to translate some DRR-related policies and strategies into practical activities at

school level, thereby ensuring long-lasting results, as schools are actively participating in DRR-related activities such as reforestation and community awareness about disaster risk reduction.

- Well-informed community can contribute to the effective implementation of disaster risk reduction activities, thereby enhancing resilience. Sustainability of school based DRR work is easy because it is cheaper and thrives on the active participation of teachers and students.

4. Way Forward for Ethiopia: Operational Steps for Mainstreaming DRR

- **Promoting schools to form clubs about disaster risk reduction:** The school club on DRR may promote DRR education in three areas – know about disaster (e.g. science behind natural hazards), prepare against disasters (e.g. class activities – disaster imagination games, hold a family DRR meetings; Domestic science - Clearing your surrounding with emergency bag making); think what you can do (e.g. Health and Physical - Prevention of injuries and First Aid; Social Studies - Our surroundings and livelihoods – Disasters and think about what you can do after evacuation; Integrated Studies - think about the disabled people)
- **Promote comprehensive school safety policy:** This may include create safe learning environments with safe location, construction and retrofit; Maintain safe learning environments with school disaster management; Protect educational access with continuity planning; Teach and learn disaster prevention and preparedness; and Build a culture of safety and inclusion
- **Promote safe school facilities:** This may include school buildings with multi-hazard features, DRR features, child friendly features, hygiene and nutrition features, environmentally friendly features. Maintenance of school buildings may include check-list and tools to maintain school facilities daily, weekly, monthly, and annually. Remedial Repairs & Maintenance (E.g. painting, roof coverings, roof structures, steel structures, Roof Fascias, Bargeboards & Exposed Roof Timbers, External Ceilings, Internal Ceilings, Walls and Floors, Doors & Windows, Electrical Installations, Plumbing Installations, and School grounds)
- **Promote school disaster management:** This may include Disaster and Emergency Preparedness Guidance for Schools by developing check-list for: i) Assessment and Planning; ii) Physical and Environmental Protection; iii) Response Capacity Development; and iv) Practicing, monitoring, and improving.
- **Promoting child friendly schools infrastructure, standards, and guidelines:** This may include standard framework, planning, Standard – guidelines (e.g. Appropriate, sufficient and secure buildings, Healthy, clean, secure and learner-protecting environment, Child-friendly, barrier-free environment which promotes inclusive access and equal rights of every child, and Adequate and appropriate equipment that supports the level of education.

Original Title	**Institutionalization of risk management, pro-GRC/German Technical Cooperation (GTZ), Mozambique**	
Source	Adapted from UNDP and ECHO (2010). Prepared under the auspices of the United Nations Development Programme UNDP) and the European Commission Humanitarian Office (ECHO) through the Disaster Preparedness Programme (DIPECHO) Regional Initiative in Disaster Risk Reduction, March, 2010, Maputo – Mozambique, pp. 110-113.	
Year of Publication 2010		Published by United Nations Economic Commission for Africa
Abstract	After the 2000 and 2001 floods in southern and central Mozambique, the governments of Mozambique and Germany (BMZ) agreed to implement a project from 2001 to 2003 to provide technical assistance through GTZ (German Technical Corporation) and in coordination with INGC (National Institute of Disaster Management). The disaster risk management (DRM) project promoted activities such as risk analysis, disaster mitigation, development of an early warning system and disaster preparedness. The project worked closely with all levels of government and with district communities. The project was community-based, acknowledging the important role played by communities through participation in and adoption of the project.	

	The GTZ's DRM project worked closely with the Mozambique Red Cross (CVM) at community level as this organization had long served in the area of community development in the districts. The geographical region of Buzi was identified mainly for its extreme vulnerability to cyclones and flooding. In 2004, DRM became incorporated into the existing rural development project (PRODER) which was already being implemented by GTZ in Sofala Province. As high vulnerability to natural disaster was found to be having a negative impact on people's lives in the high-risk areas, including DRM in the PRODER (rural development) project was seen as a critical area of intervention with its principal objective being "local actors" (district government and communities) applying DRM measures in high-risk zones based on district development plans.

1. What is presented - Institutionalization of risk management

Goal and objective: The objective of the project was to continuously provide technical assistance to communities, districts and governments to implement disaster risk management measures in priority areas threatened by floods and droughts. A further objective is to identify arid and semi-arid areas prone to droughts and bush fires, and, jointly with the local authorities, to identify relevant mechanisms for adaptation to climate change and management of hydrologic resources.

The Initiative: The German Federal Ministry for Economic Cooperation and Development (BMZ), under the German Government, has been one of the most important international donors for the strengthening of disaster risk management in the country. GTZ was assigned a reconstruction project that has supported rural development in central Mozambique since the 1990s, and in the beginning of 2001, was supplemented by a Disaster Risk Management (DRM) component. After the flood disasters of 2000, first aid and reconstruction measures were supported. In 2003, the different initiatives were combined in the common program *'Programa para o Desenvolvimento Rural'* (programme for rural development - PRODER), whose emphasis is the promotion of district development plans.
In 2003, PRODER integrated disaster risk management in municipal development planning aligned with various community-based methodologies. PRODER, in subsequent years, maintained DRR activities, supported by technical assistance, in its core set of activities. In addition to PRODER activities, experiences derived from other projects, were incorporated (e.g., development of an EWS) with the support of the Munich Re Foundation and Climate Change.
Adaptation was also addressed through the GTZ Agreement Protocol for Climate Change . The overall GTZ programme was refined in 2007 and expanded to the present programme framework based on the following key areas:

- Dissemination of tools validated as effective measures to reduce vulnerability to drought
- Implementation of local level risk management within a comprehensive all-hazard approach, including the creation of local level disaster risk management committees and enabling coordination structures from the community to the national level through the functional structure of INGC
- Vulnerability reduction to floods in the Save River (*Machanga and Govuro*);
- Reducing vulnerability in Mozambique to wildfires and/or bush fires
- Provision of organizational and technical advice to INGC, focusing on CENOEs (National Emergency Operation Centre(s).

2. What is achieved – Impacts and Results

- Behavior change and attitude modification within communities
- Adoption of minimum standards for building hazard resistant housing
- Reduction of forest and wild fires in communities involved in the project
- Successful integration of disaster risk management methodologies in PESODs with risk management responsibilities assumed by the district governments
- Monitoring and supervision by local staff to ensure that the INGC risk management guidelines are followed

The promotion of risk reduction methodologies in the district development plans consisted of the following **four components** which are aligned to a number of activities:

- District development planning with participatory activities at community level;
- Strengthening of local governments and civilian population with activities related to risk reduction and identification of relevant hazards;
- Adaptation of innovative technologies and sustainable use of natural resources;
- Disaster risk management interventions such as public education on impacts of wild fires on food security, and conservation agriculture.

Beneficiary: *Inhassoro, Vilankulo, and Govuro districts, Inhambane Province and Machanga district, Sofala Province; Central region – Búzi, Chibabava in Sofala province, and Mossurize, Sussundenga (Administrative Post of Dombe) and Manica, Manica Province; Central and Southern regions – Massange in Gaza Province, Mabote, Funhalouro and Govuro in InhambaneProvince and Machanga, Sofala Province.*

3. Is this case promote mainstreaming DRR or Is it provides opportunity to mainstream DRR?

The integration of disaster risk management into rural development existing plans is an excellent proven best practice. In the context of this project, the at-risk villages along Búzi River served as the pilot project area, receiving an integral, multi-sector and decentralised methodology. It has proven to work and already lead to important progress in the region. Furthermore, the establishment of flood EWS, including wildfires warning; the establishment of demonstration areas for testing different techniques of conservation agriculture; the creation of

community networks within local level risk management in various at–risk districts and the development of community based trained teams to undertake the risk management activities, are key elements of the methodology.

4. Way Forward for Ethiopia: Operational Steps for Mainstreaming DRR

- **Promote capacity building activities for Wereda development planning agency**: The disaster management committee or NDRMC focal person should develop capacity building on DRM for the staff associated with development planning agency at the wereda or lower level planning. The capacity building activities may include risk reduction measures and identification of relevant hazards, including impacts of drought & related hazards on food security, population, livelihood, environment. Risk reduction measures include innovative technologies and sustainable use of natural resources, conservation agriculture, etc.
- **Incorporate Wereda disaster risk information into Wereda Development Plan:** Disaster management measures need to be included into the wereda development plan. For example, disaster risks can be taken into account in connection with agricultural production, the securing of natural resources, the development of protection measures and settlement location decisions.