Federal Democratic Republic of Ethiopia

DISASTER RISK MANAGEMENT FINANCING STRATEGY 2023–2030

Ministry of Finance
January, 2024
Addis Ababa

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Acknowledgement

This Disaster Risk Financing Strategy was prepared with technical and financial support from the Building Resilience in Ethiopia (BRE) programme. The Government team was led by Ministry of Finance and other relevant institutions including Ethiopian Disaster Risk Commission (EDRMC), Ministry of Health and Ministry of Agriculture engaged in the design process.

BRE is a five-year (2019–2024) technical assistance project co-funded by the UK Foreign, Commonwealth and Development Office (FCDO) and the United States Agency for International Development (USAID). It is being implemented by Oxford Policy Management. The main aim of BRE is to support the country's drive towards becoming a middle-income country, by strengthening nationally owned and led systems that can better anticipate and respond to recurrent shocks and the resulting acute needs. The BRE vision is in line with the National Disaster Risk Management Policy and will support the 'Government of Ethiopia to lead and deliver an effective, gradually self- financed and accountable response to climate and humanitarian shocks.' Additional support was provided by the Centre for Disaster Protection.

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Foreword

Ethiopia is prone to a number of climate and disaster events. While post-disaster humanitarian assistance from donors provides critical relief, the timing and volume can be unpredictable and slow to mobilise. This often leads to partial, delayed or inadequate response, and does not contribute to protecting livelihoods or development gains efficiently, nor does it promote economic growth in a safe business environment.

The impact of climate and disaster events can however be reduced, mitigated and anticipated through proactive risk management. Building a disaster-and climate-resilient green economy is indeed one of the strategic pillars of the 10-year National Development Plan. Released in 2020, the plan indicates the Government's commitment to improve climate change and disaster resilience capabilities. Moreover, the Government has drafted a new Disaster Risk Management Policy, building on the 2013 policy, with a renewed focus on mainstreaming disaster risk management into sectoral plans and having a single, Government-led multi-hazard impact-based early warning and early action system. Disaster risk financing, and the details contained in this document, is a critical component of a comprehensive approach to disaster risk management and the achievement of associated Government plans and policies. By adopting a holistic disaster risk management approach, the Government of Ethiopia aims to address the impact of disaster events in more cost-effective ways, increase risk awareness, strengthen risk ownership and leverage the contribution of the private sector. It also recognises the need to coordinate efforts local entities, private sector and development and humanitarian partners on this agenda.

This strategy, the first of its kind in Ethiopia, will support the Ministry of Finance in its decision-making and strategic direction to increase the financial resilience of Government and affected parties against disasters. Drawing on a comprehensive stock-taking of risks and exposures, it considers distinct funding needs for risk preparedness, retention, transfer, emergency response, rehabilitation, and reconstruction in an integrated approach. It lays out seven strategic priorities, identifies target beneficiaries and complements the Government's broader disaster risk management, social protection, fiscal risk and agricultural risk management. I have a trust that the strategy reinforces government efforts in mobilising the necessary financial resources and promote the efficient management of disaster risk management. Finally, I would like to call up on all stakeholders to provide emphasis for the implementation of the strategy.

H.E Ahmed Shide
Minister, Ministry of Finance

Glossary

Budget reallocation	The process of moving appropriated funds from an existing budget category to another without increasing the total budget; can be used as a budget mechanism to finance disaster-related costs.
Contingent credit	Pre-arranged financing from a financial institution that can be accessed upon the occurrence of a pre-determined event or trigger. A line of contingent credit is an external instrument that allows borrowers to prepare for natural disasters by securing access to financing before a disaster strikes.
Contingent liabilities	Obligations to pay costs associated with a possible, but uncertain, future event. Because there is no obligation to pay unless the event occurs, contingent liabilities might not be formally listed as a liability on an organisation's balance sheet.
Disaster	A sudden, calamitous event that seriously disrupts the functioning of a community or society and causes human, material, and economic or environmental losses that exceed the community's or society's ability to cope using its own resources. Though often caused by nature, disasters can have human origins.
Disaster risk financing	Disaster risk financing covers the system of budgetary and financial mechanisms in place to credibly pay for a specific risk, arranged before a potential shock occurs. This can include paying to prevent and reduce disaster risk, as well as preparing for and responding to disasters.
Disaster risk management	The systematic process of using administrative directives, organisations, and operational skills and capacities to implement strategies, policies, and improved coping capacities in order to lessen the adverse impacts of hazards and the possibility of disaster.
Ex ante	Latin for 'from before'. In the context of disaster events, *ex ante* instruments are arranged before the event, and *ex ante* decisions are likewise made before the event.
Ex post	In the context of disaster events, *ex-post* instruments are arranged after the disaster occurs (i.e., budget reallocations are an *ex post* instrument as they are made only after a disaster has struck).
Hazard	A process, phenomenon, or human activity that may cause loss of life, injury or other health impacts, property damage, social and economic disruption or environmental degradation.
Humanitarian aid	In general terms, aid and action that is designed to save lives, alleviate suffering, and maintain and protect human dignity during and after man-made crises and natural disasters. Such aid may also be used to prevent, and strengthen preparedness for, the occurrence of such situations.
Impact	Positive and negative, as well as primary and secondary long-term effects produced by a development intervention, whether directly or indirectly, and whether intended or unintended.

Payout	An insurance payout is a sum of money paid to the policyholder when an eligible event triggers the insurance policy.
Premium	The premium is the cost that an insured party will pay for a given level of coverage: the more risk that is included in the coverage provided, the higher the premium will be. Premiums are determined by the amount of coverage chosen, the attachment point (deductible) and exhaustion point (limit) of that coverage, and the risk profile.
Preparedness	The knowledge and capacities developed by governments, response and recovery organisations, communities, and individuals to effectively anticipate, respond to, and recover from the impacts of likely, imminent or current crises. Preparedness can be divided into financial preparedness (e.g. the creation of budgetary or financial mechanisms to respond to a particular type of crisis) and delivery system preparedness (e.g. investments in enabling social protection systems to be able to scale up rapidly following a disaster).
Prevention	Activities and measures to avoid existing and new crisis risks, including mitigation activities that lessen or minimise the adverse impacts of a hazardous event without fully avoiding the impacts.
Resilience	The ability of a system, community, or society exposed to hazards to resist, absorb, accommodate, adapt to, transform in response to, and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions through risk management.
Return period	A return period is an estimate of the likelihood of a certain level of disaster risk being exceeded over the next year. For example, a 10-year return period for flooding of a particular level reflects that there is a one in 10, or 10%, chance of exceeding that level of flooding over the next year, whereas a 50-year return period indicates that there is a one in 50, or 2%, chance of exceeding that level of flooding over the next year. As return periods increase, the likelihood of these events occurring (on average) will decrease but the severity of these events will increase.
Risk assessment	A methodology for determining the nature and extent of risk by both analysing hazards and their potential likelihood and intensity and estimating impacts through evaluating conditions of vulnerability and identifying exposed people, property, infrastructure, services, and livelihoods, and the overall environment.
Risk layering	The process of separating risk into tiers to allow for more efficient financing and management of risks.
Social protection	All public measures that provide benefits to guarantee income security and access to essential health care, such as unemployment insurance, disability benefits, old-age pensions, cash and in-kind transfers, and other contributory and tax-financed schemes.
Trigger	A trigger is a predefined threshold of an index underlying a risk finance mechanism which, if it is exceeded, prompts a payout. A trigger may also leave an element of discretion to a designated party about whether or not to launch a response activity.
Vulnerability	The conditions determined by physical, social, economic and environmental factors or processes that increase the susceptibility of a community to the impact of hazards.

Acronyms

ARC	African Risk Capacity
BRE	Building Resilience in Ethiopia programme
CAT DDO	Catastrophic Deferred Drawdown Option
DRF	Disaster risk financing
DRM	Disaster risk management
EDRMC	Ethiopia Disaster Risk Management Commission
ETB	Ethiopia Birr
FY	Fiscal year
GDP	Gross domestic product
GVA	Gross value added
HRD	Humanitarian Requirement Document
MH-IB-EW-EAS	Multi-Hazard Impact-Based Early Warning and Early Action System
MOA	Ministry of Agriculture
MOF	Ministry of Finance
MOH	Ministry of Health
MOILA	Ministry of Irrigation and Low Land Areas
NBE	National Bank of Ethiopia
NGO	Non-governmental organization
ODA	Official development assistance
PFM	Public financial management
PSNP	Productive Safety Net Programme
US$	US dollars
VfM	Value for money

Executive Summary

Ethiopia is affected by droughts, floods, epidemics, insect infestations, landslides, wildfires, volcanoes, earthquakes and conflict. An estimated 2.2 million people and 175,000 people have been affected by droughts and floods, respectively, on average each year over the last two decades[1]. Vulnerability to the impact of disasters is exacerbated by the country's high level of poverty and its dependence on key sectors that are most likely to be affected by climate change: agriculture, water, tourism, and forestry. Disasters are a major source of macroeconomic and fiscal risk to the Ethiopian economy, with drought in particular leading to significant reductions in agricultural output, hydropower generation, and gross domestic product (GDP). The Government of Ethiopia recognises the risks associated with man-made events, natural hazards, and climate change, and is committed to applying a multi-sectoral approach to reduce vulnerability and strengthen resilience. Ethiopia is a signatory to the Sendai Framework for Disaster Risk Reduction 2015–2030 and has a number of laws, policies, and plans which are designed to reduce the negative impact of disasters on households, businesses, and the economy.

Effective disaster risk financing (DRF) requires pre-arranging a portfolio of financing instruments that can ensure access to reliable, sufficient, and timely resources in the event of a disaster. In addition, identifying effective delivery mechanisms is crucial to ensure resources reach affected parties in a timely, transparent, and cost-effective way. In Ethiopia, historically, there has been no pre-arranged strategy or framework in place to guide which financing instruments are available, and for what. This DRF strategy seeks to address this. It complements the Disaster Risk Management (DRM) Policy and the Government's social protection, fiscal risk, and agricultural risk management agendas.

The strategy is focused on the Federal Government's response to disasters, for the period 2023–2030, and specifically natural and man-made disasters, with a particular emphasis on droughts and floods, which are the country's most prominent hazards. The goal of this strategy is to strengthen the ability and capacity of the Government to access sufficient funding for, and to respond effectively and in a timely manner to, disasters, thereby protecting households, firms, and the economy. Achieving this goal requires focusing on seven strategic priorities:

1. Enhance understanding of disaster risks across relevant stakeholders.
2. Improve public financial practices to ensure that sufficient funds are available in a cost-effective and timely manner.
3. Enhance disaster preparedness for effective response and 'build back better' in recovery, rehabilitation, and reconstruction.
4. Strengthen disaster risk governance, including institutional coordination and collaboration.
5. Improve the legal and regulatory context for disaster response and operationalise relevant policies.
6. Support the financial and insurance sector to enhance DRF.
7. Use a risk layering strategy and develop or refine DRF instruments.

Advancements in each of these strategic priorities, through the implementation of the actions outlined in this document, will strengthen the Government's preparedness and response capacity to manage disaster risks, while contributing to protecting households, firms, and the economy from the impacts of disasters. The Ministry of Finance (MOF) is the ultimate owner of the strategy and will work with line ministries, development partners, and the private sector to implement the strategy.

[1] EM-DAT data.

1. Introduction

1.1. Scope and Purpose of the DRF Strategy

The goal of this strategy is to strengthen the ability and capacity of the Government to access sufficient funding for, and to respond effectively and in a timely manner to, disasters, thereby minimising the impact of disasters on households, firms, and the economy. The primary focus of the strategy is the effective response to natural and man-made disasters, with a particular emphasis on droughts and floods, which are the country's most prominent hazards. Achieving the strategy's goal requires focusing on seven strategic priorities, details of which are outlined in Chapter 4.

The DRF strategy has been designed to complement the DRM policy and will be implemented over the period 2023–2030. The DRF strategy and DRM policy form part of the Government's DRM approach. In both this strategy and the DRM policy, the Government seeks to improve its ability to identify and understand disaster risks; avoid the creation of new risks and reduce risks in society through greater disaster risk consideration in policies, plans, and investments; improve preparedness to manage and forecast crises; and promote quicker, more resilient recovery when disasters do occur.

Noting current financing arrangements, this strategy predominately focuses on how the Federal Government responds to disasters. The roles of each level of administrative structure are set out in the DRM policy. Each tier of government will have a DRM Council and is required to establish a disaster reserve fund and a system for its utilisation after a disaster. Noting this, this DRF strategy predominately focused on how the Federal Government responds to disasters, but it is envisaged that guidance in this document will be cascaded to each Regional Government.

It has been designed to protect, and limit the impact of disasters on, households, including women-headed household, farmers, pastoralists, front-line workers, youth, people with a lower socioeconomic status, businesses (in particular, micro, small and medium-sized enterprises), government finances and public assets. These groups will be actively considered in the implementation of actions outlined in this strategy and the design and implementation of different financing instruments.

1.2. Structure of the DRF Strategy

This strategy is structured into five chapters. Chapter 2 outlines the context for Ethiopia's DRF strategy: natural and man-made disasters and their impact in Ethiopia, and the legal, institutional, and policy framework that supports the strategy. Chapter 3 provides information on existing DRF instruments. Considering the information presented in Chapters 2 and 3, Chapter 4 sets out the Government's strategic priorities moving forward. Chapter 5 concludes the strategy with information on how the strategy will be implemented, monitored, and evaluated.

2. The Context for Ethiopia's DRF Strategy

2.1. Natural and Man-made Disasters

Ethiopia is affected by droughts, floods, epidemics, insect infestations, landslides, wildfires, volcanoes, and earthquakes. A 2023 review of 191 countries worldwide ranks Ethiopia as the 12th most at risk from disasters.[2] Moreover, Ethiopia is vulnerable to the effects of climate change, and it has also recently experienced conflict. Drought is the most significant hazard to which Ethiopia is exposed, given Ethiopia's arid and semi-arid climate in its lowland regions, its uneven geographic access to water resources, and its reliance on rain-fed agriculture. Droughts tend to be long-lasting and cross-regional events, and while less frequent than other disaster types, such as floods, tend to impact more people (see Table 1). Droughts have remained one of the key drivers of food insecurity for the country, with droughts resulting in crop damage, loss of pasture and water sources, loss of animals, hunger, disease outbreaks, asset depletion, malnutrition, and migration.

Floods have historically been relatively less damaging than drought but are the most frequent hazard type, in part due to floods' shorter duration and smaller geographic impacts, which makes them more likely to occur multiple times in various regions. The greatest flood risk occurs during the Kremt rainfall season in June, July, and August, with large-scale river flooding occurring most frequently in the lowland areas, and flash floods more likely in the highlands (including the Awash River basin in the Rift Valley). Both flash floods and riverine floods regularly disrupt the delivery of public services, cause crop and infrastructure damage, and contribute to the problem of widespread land degradation.

Public health emergencies are common due to recurrent droughts, floods, and other disaster types. The combination of water- and vector-borne diseases, and acute malnutrition are the most prevalent public health problems related to drought.[3] Moreover, emergencies due to different communicable pathogens are also major threats that cause mortality and morbidity, with a 'very high' threat posed by cholera, malaria, and measles in particular. These are known to particularly affect women, children, persons with disabilities, older persons, internally displaced persons, returnees, and refugees, with hotspot woredas across all regions but with a higher incidence in Somali, Afar, Oromia, Amhara, and Southern Nations, Nationalities and People's Region. Besides these diseases, COVID-19, meningitis, rabies, influenza, chikungunya, dengue fever, severe acute malnutrition, trauma and injury, scabies, and yellow fever have been noted as high-risk health hazards for Ethiopia.[4]

Ethiopia straddles the African and Somali tectonic plates, with a boundary between the two plates running north-south through the center of the country, which makes several cities and towns vulnerable to earthquakes (including Addis Ababa, Adama, Dire Dawa, Hawassa, and Mekelle). Landslides are caused by the active rifts, combined seismic and hydrometeorological events, as well as demographic factors, and are most prominent in the mountainous highlands and Rift Valley areas, usually following intensive heavy rainfall. (Weather-related locust outbreaks are another hazard type that has affected many areas in recent years. In 2020, Ethiopia suffered from two distinct locust invasions: on both occasions, the incidence of locusts was widespread, impacting all regions with

[2] https://drmkc.jrc.ec.europa.eu/inform-index 2023 Index. The INFORM risk index is made up of three dimensions – hazards and exposure, vulnerability, and coping capacity.
[3] Ethiopian Public Health Institute, Public Health Emergency Management Center (2020) *National Vulnerability Risk Assessment and Mapping.*
[4] *Ibid.*

rural populations, with the Afar, Somali, and Harar regions the worst affected. Other hazard types, including volcanic activity and wildfires, occur less often.

Ethiopia is also vulnerable to internal conflict. In November 2020, tensions escalated into the start of the Tigray war, which also spread to the Amhara and Afar regional states. Meanwhile, the intensity, reach, and impact of conflict in the Oromia region has been growing, alongside communal clashes in Benishangul-Gumuz and Gambella regions and boundary conflict between the Afar and Somali regions.

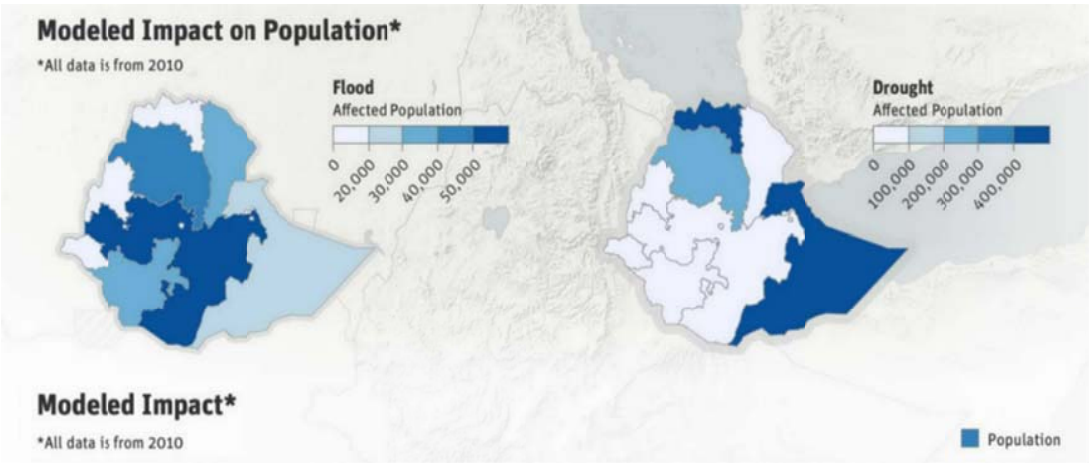
Table 1: Disasters in Ethiopia, 1971–2023

Disaster type	Number of recorded occurrences	Affected persons
Drought	**14**	**73,941,879**
Epidemic	**23**	**656,814**
Bacterial disease	16	130,551
Parasitic disease	1	25,000
Viral disease	6	819
COVID-19	1	500,444
Flood	**41**	**2,828,479**
Insect infestation	**5**	
Landslide	**6**	
Mass movement (dry)	**1**	
Volcanic activity	**3**	**11,000**

Source: *EM-DAT, CRED/UCLouvain, Brussels, Belgium – www.emdat.be and WHO.*

A significant share of Ethiopia's land area is affected by droughts and floods. Figure 1 shows the areas of Ethiopia that are at the highest risk of drought and flood impacts, modelled based on 2010 data.

Figure 1: Hazard impact on population



Source: *EM-DAT, CRED/UC Louvain, Brussels, Belgium www.emdat.be*

Vulnerability to the impact of disasters is exacerbated by the country's high level of poverty and its dependence on sectors that are most likely to be affected by climate change: agriculture, water, tourism, and forestry. Ethiopia is one of the least developed countries in the world (Ethiopia's Human Development Index is 0.442) and 23.5% of the population lived below the poverty line in 2015/16.[5]

[5] The Government's 2015/16 Household Consumption Expenditure survey noted the poverty head count was 23.5% in 2015/16.

Ethiopia's agricultural sector accounted for 32.5% of GDP in 2021/22, and it accounted for 72.7% of overall employment in 2012/13. The industrial sector, which is largely based on processing agricultural products, accounts for a further 29.3% of GDP, with the service sector contributing to the remaining 39.6% in 2021/22.6 Approximately 90% of cereal crops are rain-fed, which means harvests are vulnerable to rainfall variability. Severe drought can shrink farm production by up to 90%.7.

2.2. Socioeconomic Impacts of Disasters

At the household level, poverty, a lack of adaptive capacity, and reliance on agriculture leaves much of the population extremely vulnerable to climatic disasters. This is particularly the case for drought, which has affected an average of 2.2 million people per year over the last two decades.[8] Severe drought episodes have a substantially larger impact, such as the droughts of 2003/04 and 2015/16, which affected over 12 million and 10 million people, respectively. With agriculture providing a livelihood for 70% of households, droughts have also become one of the key drivers of poverty and food insecurity for the Ethiopian population. The 2011, 2015/16, and 2020 droughts (the latter still ongoing) left more than 4.5 million, 5.6 million, and 7.2 million people in need of food assistance, respectively.[9]

Floods affect fewer households than drought, although the impact is growing. Between 2001 and 2020, 175,000 people were affected by floods a year on average (compared to less than 40,000 two decades earlier). 1 million people were affected by flood in 2020, and in many cases much of the flood-incurred damage is neither insured nor reported.[10] The successive drought and frequent floods have had a strong effect on communities' poverty, food security, livelihood status, and human capital. Thus, these cycles of drought and flood have hindered development gains, exacerbated food insecurity, and diverted scarce development resources to relief.[11]

Climate-induced health vulnerabilities and independent events like the COVID-19 pandemic further intensify pressure on the limited shock response capacity of households and the healthcare system. The COVID-19 pandemic also had differing effects for women and men. For instance, the rate of decline in female formal employment was 8.2%, compared to 7.4% for men.[12] The direct health impacts of climatic hazards include an increase in climate-related diseases and decreased agricultural output, subsequently leading to food shortages and ultimately poorer nutrition and health. Similar adverse effects on the livelihoods of vulnerable rural households further contribute to increased malnutrition rates and constrained coping abilities.

At the business level, the rising number and intensity of climatic and other shock events further intensifies the vulnerability of Ethiopian firms, particularly small and medium-sized enterprises, which dominate Ethiopia's manufacturing, trade, and agriculture sectors. The financial stress for small enterprises following shocks has knock-on impacts for suppliers, producers, and consumers. Economies, like Ethiopia's, which are dependent on rain-fed agriculture for production and trade are affected most by shocks such as heat stress or diseases reduce crop yields and hamper labor

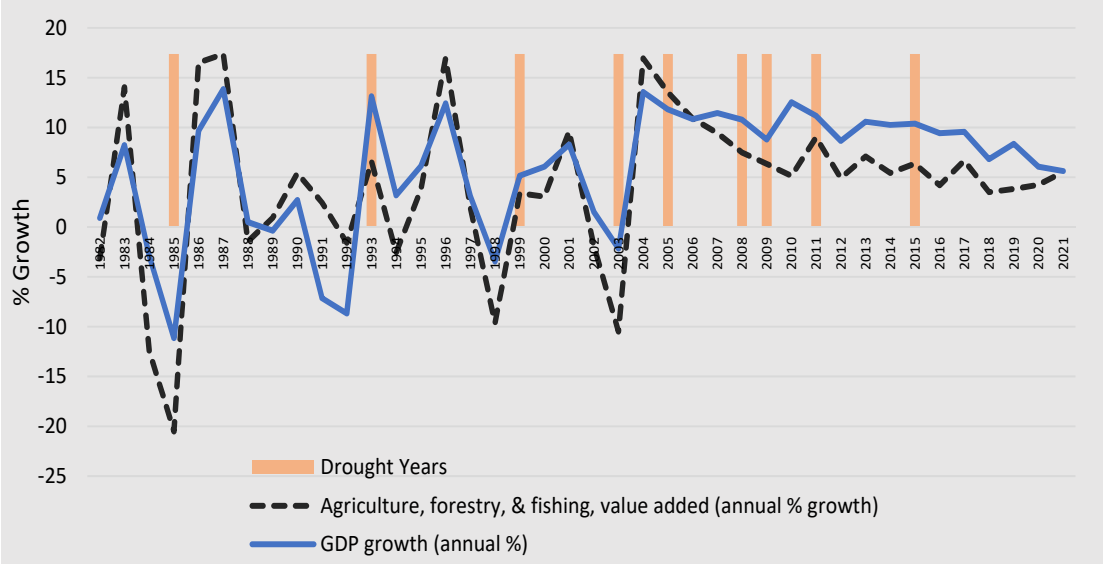
[6] FDRE Planning and Development Commission (2021-2030), 'Ten-year Development Plan'; GoE (2021/22) 'National Accounts Statistics'.
[7] World Bank (2019) 'Disaster risk profile. Ethiopia'.
[8] EM-DAT.
[9] World Bank (2022) 'Ethiopia Disaster Risk Finance (DRF) Diagnostic';
[10] World Bank (2022) 'Ethiopia Disaster Risk Finance (DRF) Diagnostic'.
[11] World Bank (2022) 'Climate Risk Profile'.
[12] Geda, A. (2021) 'The Macroeconomic and Social Impact of COVID-19 in Ethiopia in the Global Context', *UNCTAD Research Paper No. 75*, United Nations. https://unctad.org/system/files/official-document/ser-rp-2021d18_en.pdf

productivity, severely impacting trade in agricultural commodities. For small and medium-sized enterprises that participate in trade, climatic hazards can have a compounding effect as they reinforce existing challenges, which range from a lack of relevant skills and a lack of knowledge about international markets, to non-tariff barriers, cumbersome regulations and border procedures, and limited access to finance.

2.3. Fiscal Impacts of Disasters

Disasters are a major source of macroeconomic and fiscal risk to the Ethiopian economy, with drought in particular leading to significant reductions in agricultural output, hydropower generation, and GDP. As can be seen in Figure 2, the major drought episodes in Ethiopia are related to major drops in agricultural value added and GDP growth. The average growth rate of GDP for non-drought years is 0.8 percentage points higher than for drought years. Moreover, due to the destructive impacts of disasters on productive sector outputs, alongside inflationary disaster response financing mechanisms, major drought events tend to be correlated with periods of high inflation.

Figure 2: Growth of agricultural value added, GDP, and major drought episodes



Source: MOF, based on data from World Development Indicators.

The fiscal impact of certain disasters is currently being modelled by the MOF. The results of the current model are presented below. It is expected that the costs will increase over time due to climate change and population growth, and, as such, these estimates will be updated regularly (in preparation for the annual budget process). Estimates suggest that climate change may reduce Ethiopia's GDP by up to 10% by 2045, largely through drought-induced impacts on agricultural productivity.[13]

Fiscal impact of drought[14]

Drought directly affects the output of the agricultural and hydropower sectors. This, coupled with the knock-on impacts on other sectors, leads to reduced economic activity and output in the overall economy. Because of the resulting lower-than-expected GDP growth rate, government revenue from

[13] USAID (2016) *Climate Risk Profile: Ethiopia*.

[14] Probabilistic estimates are used to generate disaster scenarios for different levels of frequency and severity of drought and floods. The locust model uses historical estimates to create scenarios. The scenarios used for locust outbreaks are based on relative severity to the 2019–20 event, rather than the likelihood of an event happening in a given year.

tax and non-tax sources will be lower than expected. Moreover, on the expenditure side, the loss in agricultural production leads to an additional number of people, beyond the typical Productive Safety Net Programme (PSNP) caseload, being in need of humanitarian assistance.

For varying levels of drought intensity, from frequent once-in-every-five-years events to infrequent once-in-100-years events,15 Table 2 presents estimates of the impact of drought on agricultural output, hydropower generation, the value of GDP loss, and the resulting revenue loss. The tool calculates the total cost of each type of drought, by multiplying the additional number of people affected by drought (on top of the normal PSNP caseload) by the per beneficiary annual cost (which is estimated based on the Humanitarian Requirement Document (HRD) cost structure).

Table 2: Fiscal implications of varying levels of drought

Drought return period	Agriculture gross value added (GVA) loss (%)	Hydropower loss (%)	GDP loss (%)	Loss of general government revenue* (%)	Additional number of people in need of assistance**	Expenditure need (US$ million)
1 in 5	0.26	1.33	0.26	0.17	7,464,880	797.25
1 in 10	0.58	3.18	0.57	0.38	9,522,784	1,017.03
1 in 30	1.16	6.02	1.14	0.76	12,668,642	1,353.01
1 in 38	1.26	6.67	1.24	0.83	13,163,119	1,405.82
1 in 50	1.42	7.37	1.39	0.93	13,904,835	1,485.04
1 in 100	1.79	9.44	1.76	1.17	15,262,800	1,630.07

*Source: MOF, Disaster-Related Fiscal Risk Quantification Model. *This includes tax and non-tax revenue of both the Federal Government and sub-national governments. The loss is calculated as the share of the baseline revenue. In addition, we assume the buoyancy of the agriculture sector is zero. ** Note that this number is in addition to the PSNP safety net recipients in a typical year.*

To contextualise this, if the 2015/16 type drought (a once-in-38-years event) occurred again, tax revenue would decrease by US$ 93.55 million, and the spending need would increase by US$ 1,405 million. The total fiscal cost of such a drought is estimated to be around US$ 1,578.5 million. This is equivalent to 16% of the Federal Government budget for financial year (FY) 2022/23.[16]

Fiscal impact of floods

Like drought, floods affect the fiscal outlook of the Government through two main channels.17 Floods affect agricultural production by damaging croplands. On top of this, floods lead to a loss in the value added of non-agricultural sectors, through their impact on the proportion of years of business interruption due to the flood. The reduced economic activity and output in the agricultural and non-agricultural sectors lead to lower-than-expected GDP and lower government revenue. Floods also lead to an unanticipated increase in government expenditure. People displaced by floods

[15] The return period is the time period over which Ethiopia should expect to see a disaster of the same severity and magnitude in terms of its capacity to cause losses. For example, a one-in-10-year return period refers to a drought that has a 10% probability of happening in a given year.

[16] The general government revenue (tax and non-tax revenue) forecast for FY 2022/23 year is Ethiopian Birr (ETB) 666,021.61 million (or US$ 5,493.02 million). The total Federal Government budget for FY 2022/23 is projected to be ETB 563,929.6 billion (excluding general and specific purpose grants to regions). The exchange rate used is US$ 1 to ETB 58.77, which is the value forecast for 2022/23.

[17] Floods can also cause fiscal risks by triggering state-owned enterprises'/public–private partnerships' contingent liabilities; for now, this is not modelled.

need humanitarian assistance and the infrastructure (schools, health facilities, roads, and railways) damaged by floods may need to be reconstructed.

The MOF fiscal risk model calculates, for each level of flood severity, the loss in agricultural value added based on the total agricultural land exposed to the flood and average per hectare value of cropland. The loss to other sectors of the economy is calculated by multiplying the proportions of business days affected by each level of flood by the total GDP exposed to flood, less the agricultural loss. On the expenditure side, the total cost of each level of flood is given as a sum of humanitarian support plus the total cost of reconstructing damaged infrastructure. The humanitarian cost is calculated by multiplying the population that is exposed to each level of flood severity by the proportion of the number of days in a year the affected people need humanitarian assistance. This is then multiplied by the cost per person per year (US$ 194.2 at the time of writing). Reconstruction costs, on the other hand, are calculated by multiplying the numbers of education and health facilities exposed to flood by the maximum value of potential damage. This is added to the cost of reconstructing transport infrastructure. These results, for varying degrees of flood severity, are presented in Table 3 below.

Table 3: Fiscal impacts of varying levels of flood

Flood return period	Agriculture GVA loss (%)	Other sector loss (%)	GDP loss (%)	Loss of general government revenue (%)*	Cost of humanitarian aid (US$m)**	Cost of reconstruction (US$m)	Total cost of disaster (US$m)
1 in 10	0.18	0.19	0.52	0.19	32.50	91.32	123.82
1 in 30	0.20	0.32	0.62	0.32	59.94	112.45	172.39
1 in 50	0.22	0.41	0.67	0.41	74.55	123.70	198.25
1 in 100	0.24	0.71	0.76	0.71	99.01	145.81	244.81

*Source: MOF, Disaster-Related Fiscal Risk Quantification Model. Note: *This includes tax and non-tax revenue of both the Federal Government and sub-national governments. The loss is calculated as the share of the baseline revenue. In addition, we assume the buoyancy of the agriculture sector is zero. **This cost calculated using PSNP's cost of US$ 2.66 per person, for five days per month, extrapolated to a year.*

To contextualise this, if a once-in-10-years type of flood, of the kind that occurred in 2020 in Ethiopia, happened again, general government revenue would fall by US$ 38.98 million from its forecast value, while the Federal Government's expenditure would increase by US$ 124 million. The total fiscal cost of this would amount to US$ 162.80 million. This amounts to 2% of the total Federal Government budget in FY 2022/23.

Fiscal impacts of desert locust infestation

Locust infestation can create fiscal risks through similar channels to those that apply for droughts, but with a lower likelihood of occurring and potentially higher severity if it does occur.18 Locust infestation reduces government revenue by reducing agricultural output, and through the knock-on effect of this on the rest of the economy. On the expenditure side, locust infestation affects government expenditure through the humanitarian assistance needed to support people whose crops are damaged by locusts, and due to the increased spending needed to monitor and control the spread of the locust infestation.

[18] MOF and Vivid Economics (2020). *Guidelines for quantifying disaster-related fiscal risk in Ethiopia.*

Locust infestation impacts agricultural output by affecting cropland and pastureland. The total cereal production loss is calculated by multiplying the weighted average price of crops by the total cereal production loss due to the locust infestation, which in turn is calculated by multiplying the per hectare cereal losses by the total area of cropland affected. Similarly, the total livestock production loss is calculated by multiplying the producer price of livestock asset per farm by the total number of households affected, and the share of households which resort to damaging coping strategies – selling and consuming livestock assets. The sum of cereal production and livestock production losses gives us the total agricultural production loss due to the locus infestation. The additional spending need for humanitarian assistance is calculated by multiplying the additional number of people needing emergency food assistance by the annual cost per beneficiary, which is calculated based on the HRD cost structure per beneficiary. Similarly, the pest monitoring and control-related expenditure increase is given by the total area treated, liters of pesticides used, as well as other control costs, which include the cost of pesticides, spraying planes, and staff, and other control strategies. The total cost of locust infestation is therefore given by the sum of the humanitarian support and the total cost of pest control. Table 4 presents the results.

Table 4: *Fiscal impacts of varying levels of locust infestation in Ethiopia*

Locust infestation return period	Agriculture GVA loss (%)	GDP loss (%)	Loss of general government revenue (%)*	Cost of humanitarian aid (US$ m)**	Cost of reconstruction (US$ m)	Total cost (US$ m)
2019 - 20 infestation	0.16	0.31	0.16	106.80	118.00	224.80
Half severity of 2019 - 20 infestation	0.08	0.16	0.08	53.40	59.00	112.40
Double severity of 2019-20 infestation	0.31	0.63	0.31	213.60	236.00	449.60

Source: *MOF, Disaster-Related Fiscal Risk Quantification Model. Note: *This includes tax and non-tax revenue of both the Federal Government and sub-national governments. The loss is calculated as the share of the baseline revenue. In addition, we assume the buoyancy of the agriculture sector is zero. **This cost is calculated based on the HRD cost structure per beneficiary, which is set at US% 106.8.*

To contextualise this, if a locust infestation event the size of the 2019–20 occurrence were to happen again, general government revenue would fall by US$ 17.72 million. Humanitarian aid and pest control costs would increase government expenditure by US$ 224.8 million. The total fiscal cost of this would be US$ 242.5 million, which amounts to 3% of the total Federal Government budget in FY 2022/23.

2.4 Legal and Institutional Framework Informing the DRF Strategy

The Government of Ethiopia recognises the risks associated with man-made events, natural hazards, and climate change, and is committed to reducing vulnerability and strengthening resilience. Ethiopia is a signatory to the Sendai Framework for Disaster Risk Reduction 2015–2030 and has a number of laws, policies, and plans which are designed to reduce the negative impact of disasters on households, businesses, and the economy.

The Constitution of the Federal Democratic Republic of Ethiopia (1995) states that measures shall be taken to provide protection against natural and man-made disasters, including the provision of

financial support to regions by the Federal Government when required.19 The Constitution also assigns responsibility for disaster management to both the Federal Government and regional governments. Other supporting pieces of legislation include the Public Finance Administration Proclamation 648/2009 (amended by 970/2016), which allows for a contingency budget and supplementary budgets, which are two budgetary tools currently used by the MOF after a disaster. Proclamation 746/2012 (amended by 1163/2019) sets out the legal basis for the insurance industry in Ethiopia (insurance is an important disaster risk transfer instrument).

Building a disaster- and climate-resilient green economy is one of the strategic pillars of the Ten-Year Development Plan. Released in 2020, the plan indicates the Government's commitment to improving climate change and disaster resilience capabilities. Moreover, the Government has drafted a new DRM policy, with a renewed focus on mainstreaming DRM into sectoral plans and on having a single, Government-led multi-hazard impact-based early warning and early action system. Alongside this policy, the Government has a Climate-Resilient Green Economy Strategy (2011) and the National Adaptation Plan (2019). A refreshed public financial management (PFM) reform strategy, incorporating findings from Africa's first climate Public Expenditure and Financial Accountability (PEFA) assessment (2021), further supports developments in DRM and DRF.

Current key entities supporting the country's institutional architecture for DRM and DRF include the following: 1) the MOF, responsible for current and future DRF instruments and implementation of the DRF strategy; 2) the Federal Disaster Risk Management Council, responsible for providing high-level strategic direction; 3) the Ethiopian Disaster Risk Management Commission (EDRMC), responsible for enhancing coordination and expediting disaster responses; 4) the National Bank of Ethiopia (NBE), responsible for regulating and supporting insurance companies;20 5) the Ministry of Agriculture (MOA), with leadership of the PSNP, which has the ability to scale in response to shocks; 6) the Ministry of Health (MOH), responsible for responding to epidemics and pandemics; 7) the Ministry of Women and Social Affairs, responsible for the protection of vulnerable communities from disasters; and 8) the Ministry of Planning and Development, responsible for integrating disaster risk strategies into plans.

There are a number of inter-institutional coordination mechanisms between the Government of Ethiopia and development partners. These include the PSNP working group and humanitarian working group. EDRMC also leads federal and regional-level DRM technical working groups and hosts specialised task forces or clusters in agriculture, health, water, sanitation, and hygiene, food security, shelter/non-food items, and education. Non-state actors remain important in the delivery of assistance after a disaster.

There are 18 licensed insurers operating in Ethiopia and the state-owned insurance company, Ethiopian Insurance Corporation, is the largest, with around 40% of the market. International reinsurers predominately support the Ethiopian insurance industry, with one local reinsurance company currently operating in the market.

[19] Articles 89(3) and Articles 94(2).

[20] At the time of writing, an independent insurance supervision authority is in the process of being formed but has not yet been established.

3. Disaster Risk Financing

3.1. Existing DRF Instruments and Disbursement Mechanisms

Effective DRF requires pre-arranging a portfolio of financing instruments that can ensure access to reliable, sufficient, and timely resources in the event of a disaster. In addition, identifying effective delivery mechanisms is crucial to ensure resources reach affected parties in a timely, transparent, and cost-effective way. In Ethiopia, historically, there has been no pre-arranged strategy or framework in place to guide which financing instruments are available, and for what. This DRF strategy seeks to address this.

To date, the DRF instruments which have been used in the event of a disaster are as follows:

1) Budget appropriations and reallocations, either through virements or supplementary budgets.[21]

2) A modest contingency budget (approximately 3% of the Federal budget), which can be used to finance various unforeseen expenditure demands, one of which is disasters. Typically, the original allocation to the contingency budget is exhausted by the second quarter in the fiscal year, meaning its availability to finance disaster response later in the year depends on whether it has been topped up.

3) The Disaster Prevention and Preparedness Fund. Established in 2000, the fund received an initial budget of ETB 199 million. Approximately half of the initial fund has been spent on emergency-related operations and no further capitalisations have been made to the fund.

4) External grants from development partners. Humanitarian aid alone averaged US$ 714 million a year between 2012 and 2021, peaking in 2017 (US$ 869 million) in the wake of the 2015/16 drought and in 2021 (exceeding US$ 1 billion for the first time) in response to multiple shocks (conflict, desert locust invasion, recurrent floods and droughts, plus the COVID-19 pandemic). Table 5 provides an overview of disaster-related official development assistance (ODA) disbursements to Ethiopia by channel for 2019–21.

5) Agricultural insurance. Between 2022-2027 the government has committed $45 million to help pastoral communities build their resilience to climate risk through increased access to index-based livestock insurance[22].

Risk transfer instruments, such as sovereign insurance, have not yet been taken out by the Government of Ethiopia and the uptake of property catastrophe and disaster microinsurance, has, to date, been limited. Historically, high levels of borrowing for public investment purposes have also limited the scope for borrowing to meet disaster needs, at least on non-concessional terms.

Table 5: *Disaster-related ODA disbursements for Ethiopia, by channel (2019–21, US million)*

Sector	2019	2020	2021
Emergency response	714	655	1,091
Disaster prevention and preparedness	6	8	16
Reconstruction relief and rehabilitation	5	3	7
Humanitarian aid (total)	725	666	1,114

[21] For example, in 2019/20 it is estimated that the Government of Ethiopia reallocated ETB 20 billion in planned expenditure to cover the COVID-19 response, equivalent to 5% of total government expenditure.

[22] Ethiopia is a participating country of DRIVE - the De-risking, Inclusion and Value Enhancement of Pastoral Economies in the Horn of Africa (DRIVE) programme.

Source: *Organisation for Economic Co-Operation and Development (OECD) Creditor Reporting System [accessed May 2023]; all official donors; 2021 prices.*

The Government, in collaboration with development partners, delivers a number of programmes to provide direct support to affected communities, particularly the poor and vulnerable, after a disaster. The programmes of support can be grouped into three key areas, as outlined in Table 6.

Table 6: Post-disaster support

No.	Post-disaster support	Lead Ministry	Type of support	Beneficiary
1	PSNP	MOA	Relief payments and food	Households
2	Health Promotion and Disease Prevention programme	MOH	Disease prevention and control	Households and hospitals
3	Prevention and Rehabilitation programme	EDRMC	Relief payments and food; recovery and reconstruction	Households and public institutions/infrastructure (for instance, hospitals, schools, and roads)

Source: *MOF.*

The three areas of post-disaster support are currently financed by external assistance, loans, and budget allocations. Over the past seven years, the total average budget per annum for these three areas of support has been ETB 26.16 billion, with expenditure being significantly more than the budgeted amounts, at ETB31.48 billion per annum, pointing to the ex post nature of the financing approach, and the enduring importance of post-crisis budget reallocations (see Table 7).

Table 7: Disaster-related expenditure, FY 2015/16–FY 2021/22 (ETB billion)

No.	Post-disaster support	Avg. budget per annum	Avg. expenditure per annum	Source of funding
1	PSNP	16.76	12.58	External assistance, government treasury and external loan
2	Health Promotion and Disease Prevention programme	7.7	4.2	External assistance and government treasury
3	Prevention and Rehabilitation programme	1.7	14.7	government treasury
	Total	26.16	31.48	

Source: *MOF.*

In addition to these three areas, post-disaster support by line ministries for rehabilitation and reconstruction work is also budgeted for in annual allocations towards their respective reconstruction and recovery plans. It is not yet possible to quantify these allocations and expenditures; however, the introduction of climate- and disaster-related budget tagging should help to quantify these expenditures in the future. It should also be noted that the existence and quality of post-disaster plans varies across each ministry.

3.1.1. Productive Safety Net Programme (PSNP)

The PSNP supports chronically food-insecure households through the provision of cash and food transfers. During disasters, the Government utilises the PSNP to reach affected households. It expands safety net transfers vertically, to existing public work clients who are not receiving core PSNP transfers, and also horizontally, to non-PSNP beneficiaries. The targeting criteria for core and shock-affected beneficiaries is set out in Box 1. The targeting and registration of households for shock-

responsive transfers takes place when a Drought Response Action Plan has been issued, showing an allocation of shock-responsive transfers for that woreda.

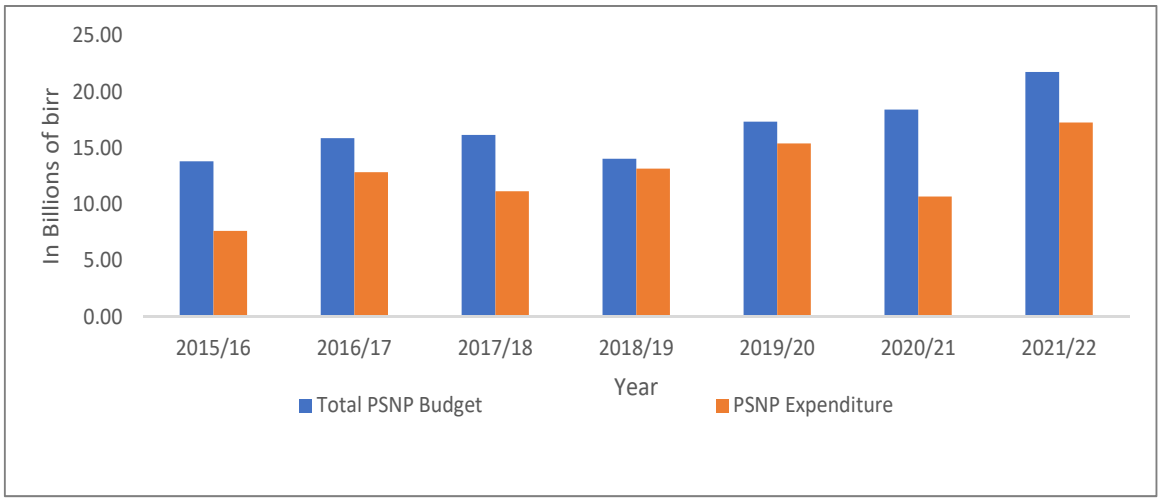
Box 1: PSNP targeting criteria

Targeting criteria – PSNP core (long-term) clients
▪ Community membership (resident in the community for the last three years) ▪ Chronically food insecure (extreme poor) – faced continuous food shortages (three months of food gap or more per year) in the last three years ▪ Those who have become suddenly food insecure as a result of a severe loss of assets (financial, livestock, means of production, assets), especially if linked to the onset of severe chronic illness, such as Aids ▪ No adequate family support and other means of social protection and support
Targeting criteria – PSNP shock response (temporary) clients
▪ People whose access to food (through purchase, production, or any other means) is temporarily reduced by a shock or a slow-onset disaster, ▪ and they are unable to maintain an adequate nutritional intake, ▪ or they are able to maintain an adequate nutritional intake only by resorting to unacceptable or damaging coping strategies, risking irreversible damage to their health or livelihoods, ▪ and they are not already adequately supported by PSNP or other programmes. *Detailed socioeconomic criteria (including assets, income sources and other means of support) are delegated to regions and woredas to develop, based on local livelihoods and social structures.* *Additional criteria:* ▪ Households with malnourished children should be prioritised for shock response assistance.

Source: MOA PSNP Shock Responsive Safety Net Operations Manual.

At present, it is not possible to calculate an exact figure for the shock-responsive element of PSNP. Over the past five years, however, actual expenditure of the PSNP has been below the approved budget. This has, in part, been due to insufficient cash being available for the approved budget allocation. The difference between the PSNP budget and actual expenditure was ETB 4.5billion in FY 2021/22. At present, the PSNP is financed by development partners (54%), loans (26%), and the Treasury (20%).23 To achieve the Government of Ethiopia's goal of funding 25% of the programme by 2025, and eventual financial self-sufficiency, there is a need to produce a robust financial plan for the PSNP.

Figure 3: PSNP budget and expenditure, FY 2015/16–FY 2021/22 (ETB billion)



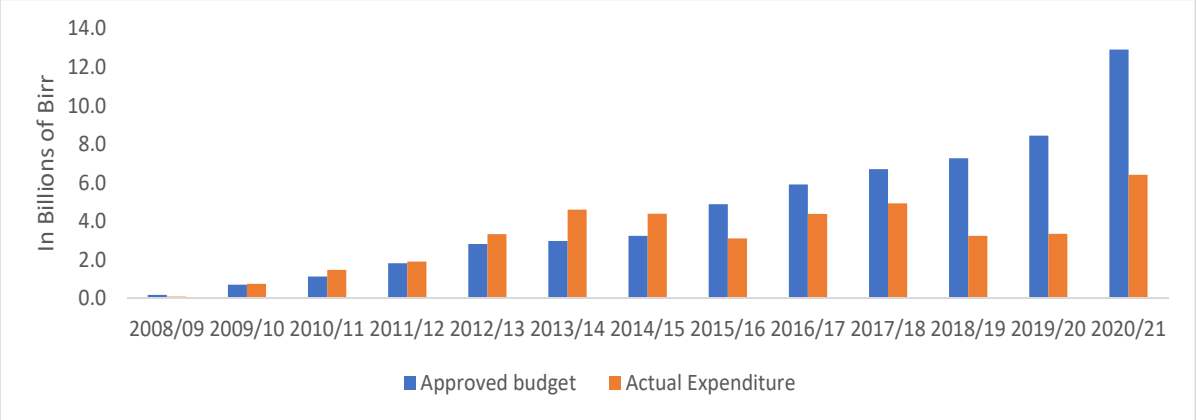
Source: MOF.

[23] MOF calculations over the period 2008/9–2019/20.

3.1.2. Health Promotion and Disease Prevention Programme

To meet health and nutrition emergency needs, the Government utilises its Health Promotion and Disease Prevention programme. The programme comprises 12 projects.24 Approximately 73% of the Health Promotion and Disease Prevention programme, over the period FY 2008/9–FY 2019/20, was financed by development partners; 27% was financed by the Government. There is currently no dedicated emergency budget at any level of government for health emergencies. As illustrated in Figure 4, the Federal Government's budget for the Health Promotion and Disease Prevention programme has grown overtime and was ETB 8.4 billion in FY 2019/20. Since FY 2015/16, actual expenditure has been below the approved budget, with budget execution at 49% in FY 2019/20. This has, in part, been due to insufficient cash being available for the approved budget allocation.

Figure 4: Health Promotion and Disease Prevention programme budget and expenditure, FY 2008/9–FY 2030/21 (ETB billion)



Source: MOF.

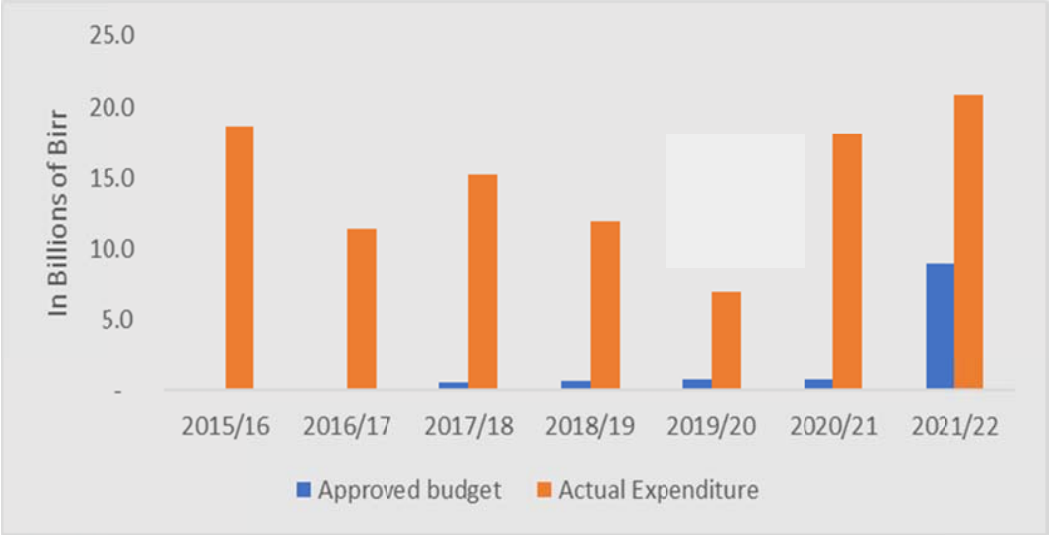
3.1.3. Prevention and Rehabilitation Programme

The Prevention and Rehabilitation programme is used to disseminate early warning results, provide rapid response after a disaster, and carry out recovery and rehabilitation activities. A review of historical government budgets and expenditure for this programme indicates that overspends are frequent. Over the period FY 2015/16–FY 2021/22, the average annual budget was ETB 1.7 billion, but the average annual expenditure was ETB 14.7 billion (see Figure 5). Over the period FY 2015/16–FY 2021/22, 89% of the Prevention and Rehabilitation programme budget was financed by the Government; 11% of the budget was financed by development partners.[25]

[24] The projects are malaria disease prevention and control, prevention and control of TB and leprosy, HIV/Aids prevention and control, prevention and control of communicable and non-communicable diseases, reducing the spread and harm of dry land diseases, strengthening the health extension programme, strengthening basic health services, basic hygiene and environmental health education and control, strengthening health services, strengthening integrated childhood, illness prevention and control, and expanding and strengthening the Expanded Programme on Immunisation.

[25] MOF Integrated Budget and Expenditure System (IBEX) report.

Figure 5: Prevention and Rehabilitation programme budget and expenditure, FY 2015/16–FY 2019/20 (ETB billion)



Source: MOF.

A key component of the Prevention and Rehabilitation programme is the Emergency Food and Non-Food Security Reserve. Managed by the Strategic Food Reserve Agency, the reserve holds four months' supplies of wheat, maize, and sorghum (around 407,000 metric tons), alongside non-food items for use during emergencies (e.g. blankets and mosquito nets).[26]

EDRMC, in collaboration with development partners, also prepares the humanitarian response plan, based on belt and Meher seasonal assessments. The response plan is funded through a pooled fund. In 2022, the required financial amount for the humanitarian response plan was US$ 3.34 billion. 67% of this need was met by development partners and the Government of Ethiopia.[27]

3.2 Multi-Hazard Impact-Based Early Warning and Early Action System

Ethiopia's response to shocks is informed by an early warning system that tracks and defines shock indicators and triggers institutional responses. To date, a lack of digitalisation, limited transparency, accessibility, and utilisation of the early warning information by diverse stakeholders, and weak institutional capacity of early warning actors at various administrative levels has meant the early warning system has not been as effective as hoped.

To address these issues over the course of the DRF strategy, the Government will implement a roadmap to improve the existing system. The Multi-Hazard Impact-Based Early Warning and Early Action System (MH-IB-EW-EAS) integrates hazard information with risk analysis to provide meaningful early warnings that allow governments, communities, and individuals not only to understand the risks related to impending events but also to act early and respond to disasters to minimise negative impacts. The system is also intended to strengthen cooperation among the various agencies involved. An overview of the MH-IB-EW-EAS roadmap is provided in Box 2.

[26] Strategic Food Reserve Agency regulation No. 284/2013.
[27] United Nations Office for the Coordination of Humanitarian Affairs (OCHA) financial tracking service, Ethiopia 2022.

Box 2: MH-IB-EW-EAS roadmap

The MH-IB-EW-EAS roadmap comprises four interrelated pathways which outline a course of action to transform Ethiopia's current early warning system. The four pillars and the desired changes are as follows:

1) **Enhanced disaster risk knowledge**
   By 2030, comprehensive and automated disaster risk information and a knowledge base are available and constructed for all dimensions of disaster risk, including hazards, exposure, vulnerability, and capacity at household, community, and organisational levels.
2) **Robust disaster detection, monitoring, and forecasting services**
   By 2030, the capacity for detection, monitoring, and forecasting of prioritised hazards, and analysis of their potential impacts, is enhanced and optimised, leveraging existing and new digital technologies, as well as global information systems.
3) **Effective early warning dissemination and communication system**
   By 2030, communication and dissemination systems (including the development of last-mile connectivity) are improved, people's access to advanced warnings is increased, and all levels of coordination and information exchange capacity are optimised.
4) **Preparedness, early action, and faster response capabilities**
   By 2030, the capabilities to prepare for and respond to warning messages, and the capacity to trigger multi-sectoral early actions for risk reduction, are enhanced.

Source: *EDRMC (2022) A roadmap for MH-IB-EWS-EAS in Ethiopia.*

3.3 Analysis of Existing DRF Instruments

Analysis of existing DRF instruments has revealed limitations and gaps in Ethiopia's current DRF instruments and their ability to respond with sufficient funds in a timely and effective manner to hazards that to which the country is predisposed. Over the duration of the strategy, actions will be taken to address the known issues, set out below:

- The use of budget reallocations, either through virements or supplementary budgets, incurs an opportunity cost of returns forgone due to delaying or cancelling planned expenditure. For example, the opportunity cost of budget reallocations for the COVID-19 response in FY 2019/20 was estimated to be ETB 11 billion, or 0.5% of GDP. The Government wishes to limit the use of budget reallocations moving forwards, through utilising more pre-agreed financing instruments.
- There is limited room for extensive post-disaster government borrowing, particularly on non-concessional terms.[28] Following decades of public investment-fueled double-digit growth, in 2019 the Government reached the limits of open market borrowing, and so has embarked on the Home-Grown Economic Reform Strategy, which focuses on fiscal consolidation and private sector-led growth. In line with this strategy, the Government wishes to support the development of the private sector and to diversify its financing instruments.
- There is currently no operational pre-arranged fund set aside to respond to disasters at the federal level. The Disaster Prevention and Preparedness Fund is not in operation and the Government's contingency budget is small, usually 3% of the total Federal Government budget, and is not earmarked for disaster responses. In line with Pillar 7 of the DRM policy, the Government wishes to establish a disaster reserve fund to help fund unplanned needs.
- Volumes of humanitarian aid from development partners can be volatile and difficult to predict, as well as being vulnerable to delays. Moreover, allocated funds often do not come into the

[28] MOF (2021) 'Flagship Report'.

government budget but are channeled through United Nations agencies and non-governmental organisations (NGOs), posing coordination challenges for the Government.[29] The Government wishes to move towards financial self-sufficiency and to progress work on developing complementary DRF instruments.

- Property catastrophe insurance and disaster microinsurance for businesses and homeowners is under-developed in Ethiopia. This is the result of challenges on the supply side (such as product development, limited delivery channels, and lack of technical capacity), challenges on the demand side (such as low product awareness, low insurance education, and lack of disposable income to afford insurance), and a need to strengthen financial and regulatory systems, including adherence to building construction codes. The Government wishes to review and support development of the insurance industry in Ethiopia.
- Various index-based agricultural crop and livestock insurance products have been pioneered in Ethiopia for small-scale farmers and livestock herders over the past 15 years, but they have not yet been scaled up to a nationwide level, and market penetration is still very low, with the pilot programmes requiring ongoing external financial support.[30] To support the take-up and provision of agricultural insurance, the Government wishes to progress work to develop an agricultural insurance policy and has committed $45 million to help pastoral communities build their resilience to climate risk through increased access to index-based livestock insurance under the DRIVE programme.
- To support the effective financing of the shock-responsive component of the PSNP, and to achieve the Government of Ethiopia's goal of funding 25% of the PSNP by 2025, and eventual financial self-sufficiency, there is a need to produce a robust financial plan for the PSNP. The shock-responsive PSNP financing plan should be in line with the risk layering strategy detailed in the DRF strategy (see Section Use a Risk Layering Strategy and Develop or Refine DRF Instruments The plan should also ensure that PSNP continues to provide value for money, providing assistance for those most in need.
- Available funding channels for health emergencies are neither responsive enough to deal with sudden-impact and rapidly evolving environments, nor flexible enough to cater to pre-emptive preparedness and containment measures.[31] Moreover, recent research indicates that funding for emergency programmes (malaria and nutrition shocks) is not aligned with the severity of incidents (i.e. the number the cases).[32] There is a need to strengthen this delivery mechanism, in line with the risk layering strategy.

[29] OECD Creditor Reporting System [accessed 09 December 2022].
[30] World Bank (2022) *Ethiopia Disaster Risk Finance (DRF) Diagnostic.*
[31] BRE (2022): Operational Research report.

- A lack of digitalisation, limited transparency, accessibility, and utilisation of the early warning information by diverse stakeholders, and weak institutional capacity of early warning actors at various administrative levels has meant the early warning system has not been as effective as hoped. The Government is seeking to address these weaknesses through implementation of the MH-IB-EW-EAS roadmap.
- There is a need to continue strengthening knowledge of disaster risk, and risk management, across relevant stakeholders. This includes addressing gaps in risk, impact, contingent liabilities, and financial data which would aid understanding and analysis of the impact of disasters and how funding is currently used.

[1] *Ibid*.

4. Disaster Risk Financing Strategic Priorities

The goal of the DRF strategy is to strengthen the ability of the Government to access sufficient funding for, and to respond effectively and in a timely manner to, disasters, thereby protecting household, firms, and the economy. This chapter outlines strategic priorities for improving post-disaster financing, and for realising the goal of the DRF strategy, as part of a comprehensive approach to DRM. This goal is complementary with the DRM policy and MH-IB-EW-EAS roadmap, in which pre-*disaster* financing is prioritised, alongside improving post-disaster financing to reduce the costs of disasters.

4.1. Enhance Understanding of Disaster Risks Across Relevant Stakeholders

By enhancing the level of understanding of disaster risks there will be an increase in critical knowledge for use in decisions that reduce the risk of exposed populations and assets in the present and that avoid the creation of disaster risk in the future. To support this strategic priority, over the duration of the strategy, the Government will do the following:

- Continue work to review climate-related expenditures and to integrate climate change and disaster risks into planning and budgeting processes.
- Continue work to enhance knowledge of disaster risks and DRF in the MOF and with relevant stakeholders.
- Improve region-specific understanding of risk exposure and disaster response systems.
- Enhance understanding of the Government's disaster-related contingent liabilities.

The intended outcome of this strategic priority is that the Government, over the duration of the strategy, has an improved understanding of disaster risks and is using this information in decision-making and plans.

4.2. Improve PFM Practices to Ensure that Sufficient Funds are Available in a Cost-Effective and Timely Manner After a Disaster

Actions taken to strengthen current PFM practices will help ensure that disaster risks are incorporated into planning and budgeting decisions, that the opportunity costs associated with budget reallocations are minimised, and that future fiscal impacts are minimised. Improved PFM practices, in line with the PFM reform strategy, will also ensure that available funds are delivered through the post-disaster delivery mechanisms in a timely and cost-effective manner. Key actions, in line with this strategic priority, include the following:

- Continue work on MOF's fiscal risk model and fiscal risk statement.
- Improve the tracking of shock responses and budget reallocations, to minimise the opportunity costs associated with budget adjustments.
- Strengthen PFM practices to be climate- and disaster-smart (in line with actions contained in the PFM strategy).
- Incorporate disaster risk information into key planning and budget documents.

The intended outcome of this strategic priority is adequate and effective public expenditure on disasters and disaster risk.

4.3. Enhance Disaster Preparedness for an Effective Response and 'Build Back Better' in Recovery, Rehabilitation, and Reconstruction

Work to enhance disaster preparedness reduces the cost of disasters in the future and strengthens the delivery of support in the present. In line with the DRM policy, the following activities will be prioritised over the duration of the strategy:

- Strengthen the early warning system in line with the MH-IB-EW-EAS roadmap. Utilisation of information from the MH-IB-EW-EAS will be used to strengthen the delivery of support after a disaster and to provide critical information for planning purposes.
- Continue work to improve and update manuals and standards for disaster preparedness, prevention, mitigation, and recovery activities across government entities.
- Develop and establish a modern system to record and update disaster losses annually.

The intended outcome of this strategic priority is that DRM principles and approaches are incorporated into recovery, rehabilitation, and reconstruction activities, thereby reducing the costs of disasters over time.

4.4. Strengthen Disaster Risk Governance, Including Institutional Coordination and Collaboration

As outlined in Chapter 2 (and in the DRM policy), several stakeholders are involved in the delivery of assistance after a disaster. To ensure that funds are available in a timely and cost-effective manner there is a need to continue work to strengthen institutional coordination and collaboration. Actions to support this strategic priority include the following:

- Review the current regulatory framework for ministers/agencies to enhance the assignment of clear responsibilities for disaster response, recovery, and rehabilitation activities.
- Support EDRMC's managerial and technical capacities to fulfil its mandate.
- Support existing coordination mechanisms to ensure they are working effectively.

The intended outcome of this strategic priority is that the coordination and collaboration between institutions, after a disaster, are improved.

4.5. Improve the Legal and Regulatory Context for Disaster Response, and Operationalise Relevant Policies

Making improvements, where necessary, to the legal and regulatory context for disaster response will enhance the delivery of cost-effective and timely support. Moreover, providing support to operationalise relevant policies that form part of the Government's DRM approach is important and will be prioritised under this strategy. Key actions in this regard include the following:

- Ensure support and coordination mechanisms are in place for the new DRM policy and DRF strategy.
- Establish dedicated procurement procedures that support the delivery of support after a disaster.
- Assess the property management legal framework, including climate-responsive asset management, to clearly define what climate-sensitive assets are and how they should be treated and recorded.
- Establish the regulatory and policy framework for the provision of agricultural insurance.

The intended outcome of this strategic priority is that the legal and regulatory context for disaster response is enhanced to ensure that support is provided in a cost-effective and timely manner.

4.6. Support the Financial and Insurance Sector to Enhance DRF

Incentivising the financial sector to provide funding to shock-exposed businesses, and reviewing and enhancing the insurance market in Ethiopia, will help to manage disaster risks for businesses and households. This in turn will reduce the impact on people, assets, and government finances. To this end, this strategy will progress work on the following actions:

- Review, agree recommendations and then implement a system to encourage lending from financial institutions to shock-exposed businesses and households.
- Scale existing insurance pilot projects. This may be through reviewing and then formulating regulations and institutional arrangements for providers to operate effectively in Ethiopia.

The intended outcome of this strategic priority, over the duration of the strategy, is that the financial sector is supported and enhanced to provide support after a disaster.

4.7. Use a Risk Layering Strategy and Develop or Refine DRF Instruments

To strengthen Ethiopia's current approach to financing disasters, a risk layering strategy has been devised (see Table 8 and
Figure 6). The risk layering strategy, informed by a value for money (VfM) assessment (see Annexes
Annex 1: Building Ethiopia's risk layering **strategy** for more detail), uses information about the frequency and severity of different risks, alongside information on instruments' cost effectiveness and wider performance factors, to determine an optimal combination of instruments to respond to different disaster return periods.

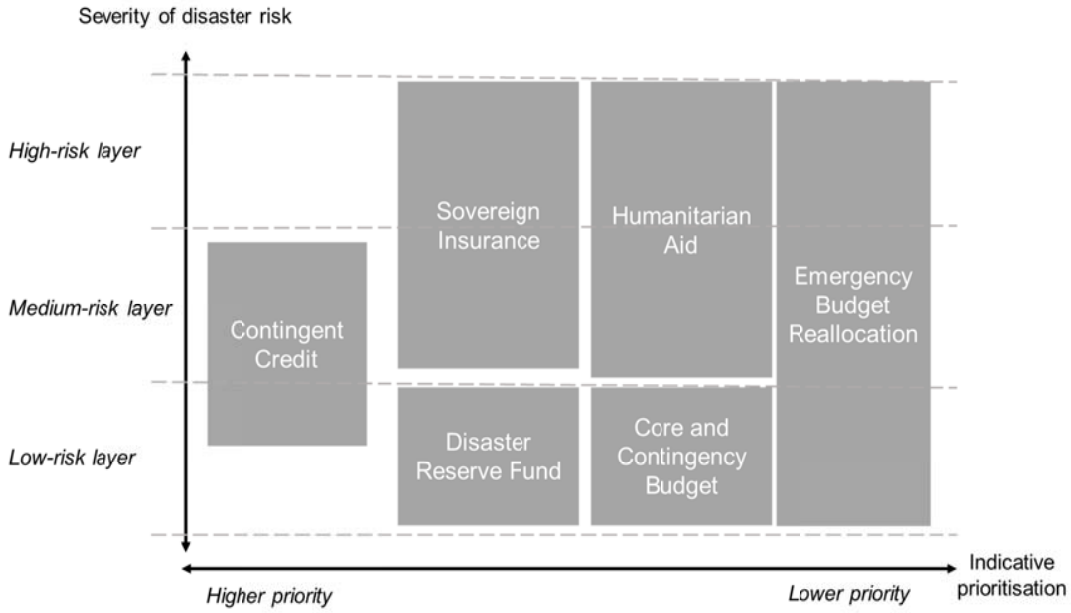
Over the duration of the DRF strategy, the Government of Ethiopia will use a risk layering strategy to access and utilise funding for disasters in a cost-effective and timely manner.[33] Moreover, the risk layering strategy will be used to provide guidance on which instruments to further refine and/or develop. Over the duration of the strategy, the Government will progress activities to develop and/or refine several DRF instruments, including use of the core and contingency budget, disaster reserve fund, contingent credit, emergency budget reallocations, insurance, and the use of Development partners' grant assistance. The intended outcome of this strategic priority, over the duration of the strategy, is that the Government utilises its risk layering strategy to inform the use and development of new and/or refined financing instruments for disasters. Overall responsibility for approving new DRF instruments ultimately lies with the MOF, and specifically the Minister of Finance. This builds on their existing mandate as the sole authority that is able to mobilise emergency loans from both domestic and foreign sources, (re)allocate budgets, and transfer funds in and out of the contingency budget. The Minister of Finance will retain overall authority for financial management and any new risk retention instruments which are introduced over the lifetime of this strategy (including, for example, a National Disaster Response Fund), and for arranging new risk transfer instruments (for example, sovereign insurance).

[33] The risk layering strategy is complementary to initiatives to access finance associated with climate change.

Table 8: Ethiopia's risk layering strategy

Event type	Low severity/high frequency	Medium severity/medium frequency	High severity/low frequency
Return period	Up to a once-in-10-years return period	From a once-in-10 up to a once-in-30-years return period	From a once-in-30 up to a once-in-50-years return period
Expenditure needs[34]	Up to US$ 1 billion for droughts, US$ 124 million for floods	Up to US$ 1.4 billion for droughts, US$ 172 million for floods	Up to US$ 1.5 billion for droughts, US$ 198 million for floods
Priority instruments	• Contingent concessional credit • Annual public bodies budget and contingency budget • DRM reserve fund • Budget reallocations to cover residual funding gap	• Contingent concessional credit • Insurance (premium support sought) • Humanitarian aid • Budget reallocations to cover residual funding gap	• Insurance (premium support sought) • Humanitarian aid • Budget reallocations

Figure 6: Risk layering



4.7.1. Financing Low-severity, High-frequency Events

For events in the first layer (up to a 10-year return period), responding to a drought would require Government expenditure up to US$ 1,017 million, while for floods up to US$ 124 million would be required.

At this return period the cheapest financial instrument for return periods up to 10 years is contingent credit: for example, the World Bank's Catastrophic Deferred Drawdown Option (Cat DDO). For these

[34] Expenditure needs have been modelled using the MOF's Fiscal Risk Model for droughts and floods. The framework can be applied to other hazards, once risk profiles (and expected costs) have been estimated.

sorts of events, therefore, it would make sense to maximise this funding source first. However, the maximum amount likely to be available to Ethiopia under a Cat DDO is in the region of US$ 317 million. This would meet the costs of a 1:10 flood but would leave a significant financing gap for a 1:10 drought. Moreover, there are a number of eligibility criteria and preparatory steps which, at the time of writing, have not been met. The Government would also need to declare a state of emergency for the loan to be triggered, which may not be appropriate for smaller disasters (occurring every five years or more).

After contingent credit, the next cheapest financial instrument for return periods up to around 10 years is either the annual public bodies budget, the contingency budget, or a disaster reserve fund. There are other factors to consider which may influence the decision on whether to use the contingency budget or a reserve fund. A reserve fund has potentially high setup costs, whereas the contingency budget is already established. However, the main drawback of the contingency budget concerns the availability of funds as it can be used for any unforeseen expenses and is often depleted early on in the fiscal year. In practice, the amount of funding required, particularly for drought, may mean it is necessary to draw on both of these sources.

Once the funding limit of the annual public bodies budget, contingency budget, and disaster reserve fund has been met, the next cheapest instrument (insurance in this case) would be the most cost-effective choice. However, the amount of insurance coverage available will be limited and it is more cost effective to reserve the use of insurance for higher return periods. Therefore, the Government of Ethiopia may need to use some emergency budget reallocations for responding to unmet needs from low-severity, high-frequency shocks, but only as a financing option of last resort.

4.7.2. Financing Medium-severity, Moderate-frequency Events

For events in the second layer (between a once-in-10 and a once-in 30-years return period), responding to a drought would require government expenditure of between US$ 1 billion and US$ 1.4 billion, while for floods between US$ 124 million and US$ 172 million would be required.

At this layer, the cheapest financial instrument continues to be contingent credit for all return periods up to around 29 years. However, there continue to be considerations around eligibility and availability, as indicated previously. Moreover, the instrument may have been exhausted for less severe, more frequent disasters.

If contingent credit is unavailable or exhausted, the next most cost-effective option is insurance. At this level, using the contingency budget or reserve fund starts to become prohibitively expensive because of the volume of funds that would need to be set aside, and the low probability that they would be used in any one year.

A single insurance policy is unlikely to finance the full extent of these needs, and the affordability of multiple policies will depend in the budgetary resourcing for premiums – which may be challenging to justify in a period of fiscal space constraints, particularly when the probability of a payout is relatively low. Premium financing support from development partners will be sought.

Financial contributions from the humanitarian aid sector are likely to respond to some of the unmet needs, for the more severe events in this layer. Budget reallocations may be used as a financing tool of last resort, or a stop gap before other financing comes online.

4.7.3. Financing High-severity, Low-frequency Events

For events in the top layer (occurring on average once in 30 years, or less frequently), responding to a drought would require government expenditure of at least US$ 1.4 billion for drought (and up to US$ 1.5 billion for a once in 50 years event), and at least US$ 172 million for floods (and as much as US$ 198 million for a once in 50 years flood).

For events of this scale, insurance becomes the cheapest option. Hence, this would imply that an optimal strategy is to insure risks in excess of around US$ 1.4 billion for drought and around US$ 172 million for floods. However, as per the previous layer, multiple policies are likely to be needed to achieve significant coverage proportionate to needs, with attendant premium costs.

Events of this scale are unlikely to be met in full through government expenditure. Therefore, financial contributions from the humanitarian aid sector are likely to respond to some of the unmet needs.

Mobilisation speed is a factor to be considered for humanitarian aid, and, to a lesser extent, insurance. A delay of weeks or months to receive funding may be acceptable for a lower severity event, but would be inappropriate in the wake of a more severe shock so this consideration may shift the optimal point at which insurance attaches in the risk layering strategy – making it more appropriate for medium-severity risks. Moreover, this means that there is a case for the third most cost-effective option at this level – emergency budget reallocations – which have the benefit of being quick – at least until humanitarian aid becomes available.

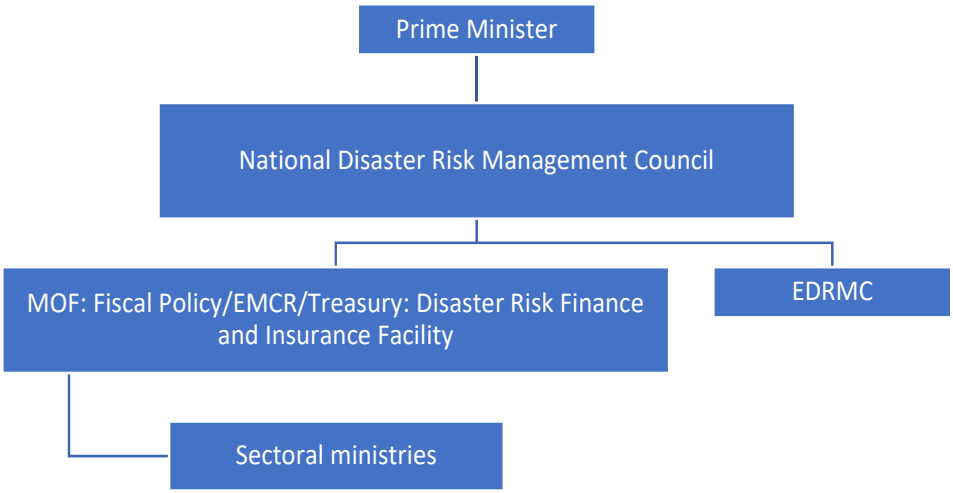
5. Implementation, Monitoring, Evaluation, and Review

5.1. Implementation

The MOF is the ultimate owner of the DRF strategy and will approve new DRF instruments, mobilise emergency loans and grants from both domestic and external sources, and facilitate budget transfers and (re)allocations in and out of the contingency budget, and will be responsible for monitoring and evaluating implementation of the DRF strategy. Line ministries, detailed in the DRF strategy action plan, are responsible for carrying out activities relevant to their mandate and reporting to the MOF on a regular basis on progress.

To support implementation, a governance structure has been established, as indicated in Figure 7.

Figure 7: DRF strategy governance structure



5.2. Monitoring, Evaluation, and Learning

The DRF strategy will be reviewed mid-way through implementation. The objectives of the review will be to determine if the strategy is being implemented as designed (actions are as per the action plan and the intended objectives are being achieved) and if amendments are needed to align the strategy with changes in the operating context or practices. An evaluation will take place at the end of the strategy period to learn lessons from what worked well and what could have been better. The lessons learned will be incorporated into future DRF strategies.

In addition, quarterly meetings will be undertaken by the MOF and members of the Technical Committee to review progress in DRF strategy implementation. Quarterly meetings will review progress in implementing the actions outlined in the action plan and to make amendments as needed. The Technical Committee, established to support drafting of the DRF strategy, is a cross-government committee chaired by the MOF.

5.3. DRF Strategy Implementation Action Plan

The goal of the DRF strategy is to strengthen the ability and capacity of the Government to access sufficient funding for, and respond effectively and in a timely manner to, disasters, thereby protecting households, firms, and the economy. Achieving this goal requires focusing on the seven strategic priorities outlined in Chapter 4. Key actions include strengthening existing DRF instruments and developing new instruments and approaches to support the effective response after a disaster.

Advancements in each of these strategic priorities, through the implementation of actions outlined in Table 9 below, will strengthen the Government's preparedness and response capacity to manage disaster risks. The implementation of actions will be guided by the following principles: ensuring that funds are received in a timely manner; ensuring that funds are disbursed and used in a way that delivers VfM; ensuring that actions are in line with the risk layering strategy; and ensuring that accurate data and information are used throughout implementation of the strategy.

Table 9: DRF strategy implementation plan

Activities/interventions (What?)	Implementer (Who?)	Implementation means (How?)	Timeline of implementation (When?)	Key performance Indicators	Costing
SP1: Enhance understanding of disaster risks across relevant stakeholders					
1.1 Review climate-related expenditure and support provided to integrate climate change into planning and budgeting processes	MOF, EDRMC, MOA, MOH, MOILA development partners	Capacity building workshops and seminars.	2024	Number of workshops and seminars held Revised budget guidelines	US$ 3,000–US$ 5,000 per workshop/seminar
1.2 Capacitate new or existing department/division in the MOF who will own the DRF strategy moving forward	MOF, development partners	Capacity building workshops and seminars.	2024 onwards	Number of workshops, training, and seminars held	US$ 10,000–US$ 20,000 per workshop/seminar
1.3 Increase parliamentary understanding of disaster risk and knowledge of DRF instruments	MOF, HOPRs	Capacity building workshops and seminars.	2024 onwards	Number of workshops and seminars held	US$ 3,000–US$ 5,000 per workshop/seminar
1.4 Exchange knowledge and information on the impact of disasters on households, firms, and economy, and visualise expected losses from future disasters, with relevant stakeholders	MOF, EDRMC, MOILA development partners	Capacity building workshops and seminars.	2024 onwards	Number of workshops and seminars held	US$ 3,000–US$ 5,000 per workshop/seminar
1.5 Improve region-specific understanding of risk exposure and response systems	MOF, Regional Offices	Capacity building workshops and seminars.	2024 onwards	Number of workshops and seminar held	US$ 3,000–US$ 5,000 per workshop/seminar
1.6 Identify and quantify the Government's disaster-related contingent liabilities	MOF, development partners	Undertake a review to identify and quantify disaster-related contingent liabilities.	2025 onwards	Explicit and implicit disaster-related contingent liabilities known	US$ 50,000–US$ 100,000
SP2: Improve PFM practices to ensure that sufficient funds are available in a cost-effective and timely manner after a disaster					
2.1 Strengthen the risk assessment based on the fiscal risk model and incorporate details into budget statements	MOF, EDRMC, MOA, MOH, MOILA Ministry of Planning and Development	- Review budget statement in line with disaster risk assessments. - Assess the impact of disasters on key variables. - Incorporate disaster risk analysis in the planning of public investments.	2024 onwards	Disaster risk incorporated into budget statements and planning of public investments	US$ 50,000–US$ 100,000
2.2 Update the fiscal risk statement and	MOF	Review and update fiscal risk statement	2024 onwards	Public disclosure of updated	No setup costs

Activities/interventions (What?)	Implementer (Who?)	Implementation means (How?)	Timeline of implementation (When?)	Key performance Indicators	Costing
registry and make them available to the public		and registry.		fiscal risk statement	
2.3 Set up a database or improve the existing reporting and tracking for shock responses to avoid multiple readjustments to the budget	MOF, development partners	Review PFM reporting, manuals, and guidelines.	2025 onwards	Review and update conducted	US$ 50,000–US$ 100,000
2.4 Build capacity to perform in-depth disaster risk assessments of project proposals and integrate information into project evaluation processes. Integrate good practices into a guideline	MOF, MOILA Ministry of Planning and Development	Workshops, seminars, and experience sharing.	2024 onwards	Number of workshops, experience sharing events, and seminars held	US$ 3,000–US$ 5,000 per workshop/seminar
2.5 Strengthening existing PFM practices to be climate- and disaster-smart	MOF, development partners	Review and revise PFM law and guidelines/practices, as required.	2025 onwards	Review and updates conducted	No setup costs
SP3: Enhance disaster preparedness for effective response and to 'build back better' in recovery, rehabilitation, and reconstruction					
3.1 Strengthen the early warning system as per the MH-IB-EW-EWS roadmap and strengthen the capacity of the EDRMC to coordinate early warning across sectors	EDRMC, MOILA, development partners, NGOs	- Utilisation of MH-IB-EW-EAS - Workshops on early warning system.	2025 onwards	Number of manuals and guidelines prepared and disseminated, as well as number of workshops conducted	US$ 3,000–US$ 5,000 per workshop/seminar
3.2 Improve and update manuals and standards for preparedness, prevention, mitigation, and recovery activities	EDRMC, development partners, NGOs	- Prepare working manual and guidelines. - Workshops on updated manuals for preparedness, prevention, mitigation, and recovery.	2024 onwards	Number of manuals and guidelines prepared, as well as number of workshops organised	US$ 3,000–US$ 5,000 per workshop/seminar
3.3 Develop and establish a modern system to record and update disaster losses annually (disaster loss database)	EDRMC, development partners	Improve the existing system for recording and updating disaster data and information through workshops and experience sharing.	2028 onwards	Quality of data and system	US$ 50,000–US$ 100,000
SP4: Strengthen disaster risk governance, including institutional coordination and collaboration					
4.1 Review current regulatory framework for ministers/agencies to enhance the assignment of clear responsibilities for coordination and response when a disaster occurs	MOF, EDRMC, MOA, MOH, MOILA	Review legislation, regulations, and functions, and make adjustments, where required.	2025-2027	Review conducted and adjustments made, as required	US$ 3,000–US$5,000 per workshop/seminar

Activities/interventions (What?)	Implementer (Who?)	Implementation means (How?)	Timeline of implementation (When?)	Key performance Indicators	Costing
4.2 Strengthen coordination, collaboration, and partnership among key stakeholders for effective disaster responses. Strengthening the capacity of EDRMC to fulfil its mandate.	EDRMC, MOILA	Improve institutional coordination mechanism and partnership.	2024 onwards	Review of coordination activities and partnerships, post-disasters, and remedial actions taken, as required	No setup costs
SP5: Improve the legal and institutional context for disaster response and operationalise relevant policies and regulatory frameworks					
5.1 Coordinate and mainstream new DRM policy in line with the DRF strategy	EDRMC, MOF	Dissemination workshop with key stakeholders on new DRM policy Follow-up and monitoring of DRM mainstreaming.	2024/ongoing	Number of dissemination workshops conducted. Number of regular follow-up and coordination activities	US$ 9, 000–US$ 15,000
5.2 Establish dedicated emergency procurement procedures that build on framework agreements, shorter deadlines, and periodically adjusted thresholds	MOF	Develop a new emergency procurement procedure.	2028	Readiness to review the existing procurement law or to develop a new one	US$ 50,000–US$ 100, 000
5.3 Assess the property management legal framework, including climate-responsive asset management, to clearly define what climate-sensitive assets are and how they should be treated and recorded	MOF, Public Procurement and Property Authority	Develop public assets registry system.	2028	Number of regulations and arrangements	US$ 50,000–US$ 100, 000
5.4 Establish the regulatory and policy framework to support the provision of agricultural insurance	MOF, MOA	Develop policy on supporting agricultural insurance.	2024	Number of regulations and arrangements	US$ 50,000–US$ 100, 000
SP6: Support private sector financial systems to enhance DRF					
6.1 Enable a system to encourage lending from financial institutions to shock-exposed businesses	NBE, MOF, MOA	Review the current system and make necessary adjustments, as appropriate.	2028	Review conducted	No setup costs
6.2 Scale existing insurance pilot projects to enable disbursements via objective triggers or delivery mechanisms	NBE, MOF, MOA, MOILA development partners	Formulate appropriate regulations and institutional arrangements for private sector to operate.	2025 onwards	Appropriate regulations and institutional arrangements in place	Operating cost of around US$ 200,000 to US$ 300,000
SP7: Use a risk layering strategy and develop or refine DRF instruments					

Activities/interventions (What?)	Implementer (Who?)	Implementation means (How?)	Timeline of implementation (When?)	Key performance Indicators	Costing
7.1 Strengthen institutional capacity to quantify, monitor, and manage risk retention and transfer instruments	MOF, development partners	- Annually review all the risk finance instruments to ensure relevance and that they continue to meet Government objectives. - Prepare national risk profiling and the national early warning system to trigger financing.	2024 onwards	Number of reviews, workshops, and trainings	Operating cost of US$ 20,000 to US$ 30,000
7.2 Annual public bodies budget and contingency budget: continue to grow *ex ante* commitments to disasters through utilisation of data from budget tagging	MOF	Prepare contingency plan and budget Continued technical assistance from development partners	2023–25	Mobilisation speed, against one day and one week Analysis of budget tagging information	No setup costs
7.3 National disaster reserve fund: design and establish a dedicated fund for disasters	MOF, EDRMC, development partners	- Formulate regulations and institutional arrangements for the disaster fund. - Develop regulations and directives once the proclamation has been approved by the parliament on disaster reserve fund. Scoping, design, establishment, and capitalisation.	2024 onwards	Number of regulations, trainings, workshops. Mobilisation speed, against two weeks.	Setup costs: indicatively US$ 100,000 to US$ 200,000 Operating costs (per annum): US$ 11,612.99[35]
7.4 Contingent credit: investigate suitability and required actions to access disaster-related contingent credit, e.g. a World Bank Cat DDO	MOF, World Bank	- Seek technical assistance from World Bank on contingent credit procedures. - Prepare report of result indicators by engaging with annual/six-monthly implementation reporting.	2025/26 onwards	Number of trainings and workshops. Mobilisation speed, against two to three days.	Indicative access cost of US$ 50,000 to US$ 100,000
7.5 Emergency budget reallocation: adopt an *ex ante* framework	MOF	Prepare emergency plan and procedures to limit the opportunity cost associated with budget reallocations.	2023 onwards	Mobilisation speed, against two weeks.	No setup costs
7.6 Insurance: review appropriate levels and types of insurance.	MOF, MOA, NBE, African Risk Capacity (ARC), UNDP,	- Formulate regulation and review institutional arrangements for insurance. - Explore the feasibility of agricultural insurance, including data required, eligibility, cost of product, claims	2024	- Number of regulations formulated, and types of institutional arrangements. - Mobilisation speed, against two weeks.	Setup costs of US$ 50,000 to US$ 100,000. Review may be undertaken through the DRIVE

[35] US$ 1 = ETB 48.5663, weighted rate: Foreign Exchange Monitoring & Reserve Management Directorate and Staff Compilation, NBE (2022) '2021-22 Annual Report'.

Activities/interventions (What?)	Implementer (Who?)	Implementation means (How?)	Timeline of implementation (When?)	Key performance Indicators	Costing
	World Bank	management processes, indicative pricing options.			programme.
7.7 Humanitarian assistance: review allocations and implementation of aid and grants	MOF, EDRMC, development partners	- Review allocations and implementation of humanitarian aid and grants. Prepare national-level contingency plan. Prepare national humanitarian plan.	2024	Mobilisation of aid, against one to two months target, delivered for the right people at the right time.	No setup costs

Annexes

Annex 1: Building Ethiopia's risk layering strategy[36]

Ethiopia's DRF instrument layering approach was informed by a VfM analysis that responded to the following value statement:

> DRF instruments should support the wider DRF strategy objective of reducing the impact of disasters on the economy, firms, and households.
> To do this, funding should be provided in a **cost-effective** and **timely** manner. We seek to improve the **coverage** and **quality** of DRF financial and budgetary instruments to mobilise resources (beyond historic levels) from a more **diverse range** of sources and to **facilitate preparedness and risk reduction**.

Guided by this value statement, the VfM analysis considered both economic cost and other factors. The quantitative assessment centred around the assessment of the marginal opportunity cost of different options, at different return periods. Box 3 unpacks the concept of marginal opportunity cost analysis. Wider factors which were considered in the analysis are detailed in Table 10.

Box 3: What is a marginal opportunity cost analysis?

When looking at the financial costs of different strategies to fund disaster-related expenditures it is helpful to consider the **opportunity cost** of using these instruments at different **return periods.**

What does this mean?

The ***opportunity cost*** considers the full economic cost to the Government of using each financial instrument to fund disaster-related costs. It includes the cost of the instrument, as well as the cost of not using that money for something else. For example, if we think about the opportunity cost of using a contingency budget, this would not only be the amount held as contingency, but also the cost if the contingency budget was not utilised, i.e. the amount held plus the return that could have been earnt if those funds were invested elsewhere.

A ***return period*** is an estimate of the likelihood of a certain level of disaster risk being exceeded over the next year. A return period of 1:30 implies a much more severe and less frequent disaster than, say, a return period of 1:5.

What we are considering in the VfM analysis is ***the marginal opportunity cost multiple at a given return period*** – this the full economic cost to Government per US$ 1 of disaster-related expenditure, if it were to use a certain instrument to fund the response to a disaster at a certain return period. In this way, marginal opportunity cost multiples can be used to understand and evaluate the costs of different risk financing instruments at different return periods.

[36] The analytical underpinning of this analysis is based on Centre for Disaster Protection (2023) 'Applying a Value for Money Framework (VFM) to inform Ethiopia's Disaster Risk Financing Strategy (DRFS)'.

Table 10: Wider considerations in the VfM analysis

Wider considerations included in the VfM analysis	How it relates to the value statement
Additional financial costs (including startup/sunk costs, and other costs not included in the marginal cost analysis)	Cost effectiveness
Maximum amount of financing available	Improved coverage
Eligibility requirements	Cost effectiveness, timeliness
What the instrument finances	Improved coverage
Mobilisation speed	Timeliness
Incentivisation of risk reduction and preparedness	Facilitates preparedness and risk reduction
Predictability	Quality
Government autonomy in regard to instrument design	Quality
Diversification of risk ownership	Diversification of risk ownership

The VfM analysis considered five generic macro-level instruments. The instruments considered by the analysis were selected on the basis that they were either already in use or are currently under development and/or there is appetite to explore them further. The instruments assessed were as follows:

- **The original public bodies budget and contingency budget:** The national government budget, in both its annual allocation to public bodies, as well as annual reserves set aside in the general contingency budget, are two risk retention financing instruments that are currently in use in Ethiopia to finance disaster costs**.**

- **DRM fund:** A disaster reserve fund is envisaged under the revised DRM policy, albeit one is not in place at the time of drafting. Nonetheless, it is included in the VfM analysis given the commitment to establishing one. A reserve fund is a specific fund that is set up so the Government can access it when needed but it is ringfenced for specific expenditure on disaster costs and so it is not available for general expenditure. The reserve fund is primarily a risk retention instrument (as it is expected to be financed by the Government) and a risk transfer instrument (as it will also be open to contributions from development partners, the private sector, and individuals).

- **Contingent credit:** Lines of contingent credit are pre-arranged loans that (in advance of a shock) it is agreed will be made available on specified terms following a disaster if the disaster's severity meets or exceeds a certain threshold. The borrower may pay a small fee in advance to set it up and, if they draw down on the loan, they pay additional interest charges. Contingent credit is available for some countries from the World Bank, the International Monetary Fund, as well as from some development partner governments. For the purposes of the analysis, the contingent credit is based on Cat DDOs. This is a type of contingent loan that is provided by the World Bank that provides countries with immediate liquidity to address the costs associated with disaster events, with interest payable on drawdown balances. It is approved prior to the disaster and disburses quickly once the event takes place, with the drawdown trigger typically being the member country's declaration of a state of emergency.

- **Emergency budget reallocation:** Emergency budget reallocation is a risk retention instrument that can be employed by governments after a disaster. It refers to the process of diverting budgeted funds away from other government projects they were original allocated to, to finance disaster response, recovery, and reconstruction. It is widely used in Ethiopia as a means to finance disaster costs.[37]

- **Insurance:** Insurance is risk transfer instrument whereby the Government could pay a premium to a third party, such as an insurance company, who will provide a payout to cover costs if a disaster occurs. For the purpose of the VfM analysis, the insurance instrument is based upon a sovereign product available from ARC. The Government of Ethiopia signed a treaty to join the African Union's ARC in October 2023.

- **Humanitarian aid:** Post-disaster humanitarian aid is an additional risk transfer mechanism that is used to support disaster-related costs. There is a significant history of humanitarian aid in Ethiopia. Humanitarian aid is excluded from the first part of the VfM analysis (looking at marginal opportunity cost) because this considers costs of funding government expenditure on disasters, and humanitarian aid operates outside of government systems. However, it is included under the analysis of wider considerations.

Figure 8 shows the results of the marginal opportunity cost analysis, over increasing return periods, which is a central measure of 'cost effectiveness' under the value statement. This analysis is based on a number of simplifications and assumptions set out in the unabridged version of the strategy.
The figure should be interpreted as follows:

- The vertical axis shows the opportunity cost of mobilising an additional US$ 1 of government expenditure on disaster-related costs. For example, for an instrument with a marginal opportunity cost multiple of 1.5 this means that for each US$ 1 of government expenditure on disaster-related costs the opportunity cost incurred from using this instrument would be US$ 1.50.

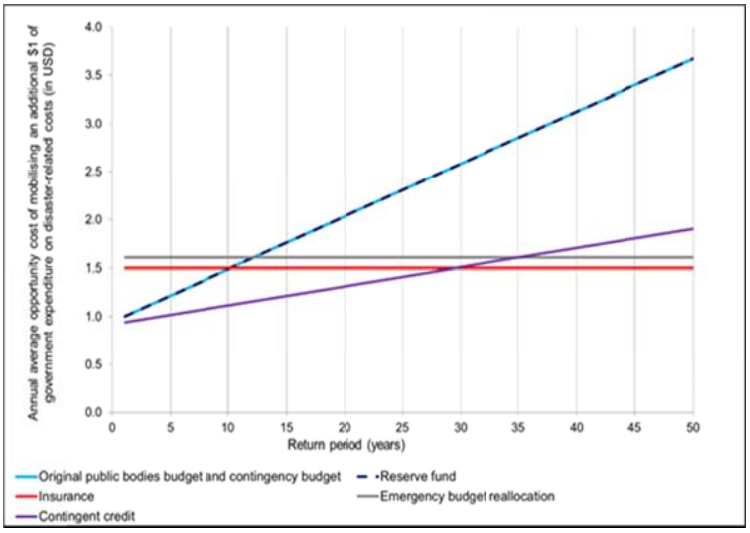
- The horizontal axis shows the return period of the disaster event in years, i.e. where '10' denotes an event which is assumed to occur once in every 10 years. Moving from the left of the graph to the right corresponds to events of increasing severity and therefore larger costs.

- For any given return period (position on the x-axis) the lowest line on the graph is the instrument which provides the most efficient method of funding. The point where two lines cross represents the point at which switching instruments to fund remaining need should be considered. Where an instrument has been completely used up, or is not available, the next lowest line would be the most cost-efficient instrument.

However, this figure looks at only one aspect of VfM (marginal opportunity cost). In practice, one instrument may have the lowest marginal opportunity cost, but it may be inappropriate to use it due to other considerations (discussed below). Therefore, conclusions about the VfM of DRF instruments have not been drawn based on this graph alone.

[37] BRE (2023) 'The Opportunity Cost of COVID-19 Budget Reallocations in Ethiopia'.

Figure 8: Marginal opportunity cost of different financing instruments, over increasing return periods



Source: Centre for Disaster Protection (2023)

Wider costs and benefits of the instruments – beyond marginal opportunity costs – have also been considered in the VfM analysis. While the US$/ETB value of these costs and benefits may be hard to determine, or may vary depending on factors to be spelt out in the detailed instrument design process, the analysis here employs a red/amber/green (RAG) rating to indicate the likely relative scale of these costs and benefits.[38] Table 11 summarises these ratings (a fuller discussion is provided in the unabridged strategy).

Table 11: Qualitative considerations in the VfM analysis

	Additional financial costs	Amount of financing available	Eligibility requirements	What the instrument finances	Mobilisation speed	Risk reduction and preparedness	Predictability	GOE autonomy in regard to design	Diversification of risk ownership
Public bodies budget and contingency budget									
DRM fund									
Contingent credit									
Emergency budget reallocation									
Insurance									
Humanitarian assistance									

[38] A green rating indicates a low cost or barrier to adoption, meaning costs could be accommodated within the existing government budget allocations; and/or the requirements identified do not imply significant additional resources, time, staffing, or capacities, above those which already exist in the Government of Ethiopia. Conversely, a red rating indicates a high cost or barrier to adoption, meaning costs cannot be accommodated within the existing government budget allocations, significant new resources would need to be identified and allocated to meet these needs; and/or the requirements identified imply significant resources, time, staffing or capacities, above those which already exist in the Government of Ethiopia.