

# DISASTER RISK FINANCE DIAGNOSTIC UGANDA



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Disaster Risk Financing  
& Insurance Program



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## ABBREVIATIONS

<b>AI</b>	Artificial Intelligence
<b>ARC</b>	African Risk Capacity
<b>AYII</b>	Area Yield Index Insurance
<b>Cat DDO</b>	Catastrophe Deferred Drawdown Option
<b>CERF</b>	Central Emergency Response Fund
<b>DCRM</b>	Displacement Crisis Response Mechanism
<b>DMF</b>	Disaster Management Fund (Fundo de Gestão de Calamidades) (Mozambique)
<b>DRDIP</b>	Development Response to Displacement Impacts Project
<b>DRDPM</b>	Department of Relief, Disaster Preparedness and Management
<b>DRF</b>	Disaster Risk Finance
<b>DRM</b>	Disaster Risk Management
<b>FEWS</b>	Flood Early Warning System
<b>FRS</b>	Fiscal Risk Statement
<b>GDP</b>	Gross Domestic Product
<b>GoM</b>	Government of Mozambique
<b>GoU</b>	Government of Uganda
<b>IDA</b>	International Development Association
<b>INGC</b>	National Institute of Disaster Management (Mozambique)
<b>IPC</b>	Integrated Food Security Phase Classification
<b>IRA</b>	Insurance Regulatory Authority
<b>LIPW</b>	Labor-Intensive Public Works
<b>MoFPED</b>	Ministry of Finance, Planning and Economic Development



## ABBREVIATIONS

<b>MPC</b>	Ministerial Policy Committee
<b>MPCI</b>	Multi-Peril Crop Insurance
<b>MSMEs</b>	Micro, Small, and Medium Enterprises
<b>NDPIII</b>	National Development Plan-III
<b>NDVI</b>	Normalized Difference Vegetative Index
<b>NECOC</b>	National Emergency Coordination and Operations Centre
<b>NGO</b>	Non Governmental Organization
<b>NPDPM</b>	National Policy for Disaster Preparedness and Management
<b>NUSAF 3</b>	Third Northern Uganda Social Action Fund Project
<b>OPM</b>	Office of the Prime Minister
<b>PAF</b>	Poverty Alleviation Funds
<b>PHEOC</b>	Public Health Emergency Operations Centre
<b>PPE</b>	Personal Protective Equipment
<b>SCG</b>	Senior Citizens Grant
<b>SMEs</b>	Small and Medium Enterprises
<b>UAIS</b>	Uganda Agriculture Insurance Scheme
<b>UNHCR</b>	United Nations High Commissioner for Refugees
<b>WHO</b>	World Health Organization

## EXECUTIVE SUMMARY

**The Government of Uganda (GoU) faces significant challenges in developing a national shock-responsive social protection system.** These include (i) the lack of a national dynamic social registry to identify vulnerable groups, including refugees, across the country; (ii) the lack of a robust and flexible payment approach to allow timely and expanded coverage for social protection beneficiaries; and (iii) the absence of efficient risk financing options to allow timely and predictable resources for response to shocks. Against this background, the World Bank is providing technical assistance for strengthening social protection systems in Uganda. The World Bank's Finance, Competitiveness and Innovation (FCI) Global Practice, its Disaster Risk Financing and Insurance Program (DRFIP), and its Social Protection and Jobs Global Practice prepared this disaster risk finance (DRF) diagnostic as part of this comprehensive technical assistance program. The diagnostic complements ongoing analytical work on digitization of government-to-person (G2P) payments and operationalization of a dynamic national social registry.

**The objective of the DRF diagnostic is to assess the level of Uganda's financial preparedness to disasters and crises and provide recommendations to strengthen financial resilience of the government and the poor and vulnerable.** This assessment entails analysis of (i) the economic and fiscal impact of disasters; (ii) the legal and institutional arrangements for DRF; (iii) prearranged funding available to the government for response; (iv) the domestic insurance market; and (v) the potential funding gap—that is, the difference between the amount of prearranged funding available to government and the estimated cost of response to disasters. Based on this analysis, the diagnostic proposes options to improve financial planning to meet the cost of disaster response and

aims to strengthen the resilience of the poor and vulnerable by providing a technical analysis of the costs of an adaptive social protection system. The analysis combines desktop research and expert interviews in line with good practice methodology developed by the World Bank and development partners, available in World Bank and ADB (2017).

**Uganda is vulnerable to multiple shocks, including climatic hazards (droughts, floods, storms, landslides), earthquakes, epidemics, and displacement shocks.** Disaster events have been increasing in frequency over the past 20 years. Prior to the year 2000, Uganda experienced about one disaster event per year. Since then, the number of events per year has increased, reaching a high of nine in 2019, and has included climate shocks and epidemics. Drought is the most dominant and widespread climatic shock in Uganda, and its frequency is increasing.<sup>1</sup> Of all shocks affecting the country, drought causes the greatest economic loss and affects the most people due to its extensive impact on productivity, livelihoods, and food security. On average 4.5 million people are affected by water scarcity each year, mainly in central and northeastern Uganda. Flood risk affects at least 45,000 people a year and is variably distributed across the country. Epidemics occur nearly every year and cost about US\$3 million per occurrence. Uganda also experiences significant displacement shocks, which are estimated to cost US\$1.2 billion per year. The recurrence and impacts of these shocks exacerbate Uganda's existing vulnerabilities.

**Disasters have wide macroeconomic impact and contribute to eroding the country's development gains.** Annual gross domestic product (GDP) performance declined by 3.5% on average between 2010 and 2014 due to climatic shocks (OPM 2020). COVID-19 had a similar effect on FY2020/21 GDP, which recorded a decrease of 3.3% compared to the pre-COVID-19 forecast.

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1. Ministry of Water and Environment, Climate Change Department, Uganda National Adaptation Programmes of Action.

In 2020, disasters caused direct economic losses of UGX 563.24 billion (US\$152.2 millions) (OPM 2020), an increase of 14% compared to the previous year and equivalent to 0.42% of Uganda's nominal GDP. Climatic shocks' heavy impact on other productive sectors, like transport and energy, exacerbates food insecurity and challenges resilience. The social unrest and displacement risks that Uganda faces make the country more vulnerable to disasters. Such multidimensional risks reduce the already constrained capacity of government, households, and businesses to absorb and recover from disasters.

**Disasters in Uganda disproportionately impact the poor, and compound shocks like COVID-19 intensify poverty.** Indeed, an assessment of the socioeconomic impacts of the 2010–11 drought found that the most severe effects occurred in districts with the lowest human development conditions. The drought and pest infestations in 2016–17 largely explain the increase in poverty incidence from 19.7% in FY2012/13 to 21.4% in FY2016/17. Like drought, COVID-19 also intensified poverty and increased the unemployment rate. During the first eight weeks of the pandemic, 1.9 million Ugandans fell into poverty, increasing the rate of poverty by nearly 16%. At the end of 2021, 25% of the population was living below the poverty line, compared to 21.9% at the start of the year. Poor households often lack the means to cope with the shocks they experience and resort instead to negative coping strategies. Insurance penetration stands at 1%, while social protection programs in Uganda cover only 3% of the population.

**The GoU is a global leader in adaptive social protection and could build on its innovations.** GoU successfully implemented a scalability mechanism under the Third Northern Uganda Social Action Fund (NUSAF 3) project, which was budget positive with robust evidence of development impact in terms of food consumption, asset creation, and resilience. If the GoU developed a shock-responsive social protection system with ex ante financing instruments, it could address impacts of covariate shocks related to climate risks, displacement, epidemics, etc. in a timely manner.

**Managing disasters is essential for reducing vulnerabilities to shocks and mitigating shocks' adverse impact, especially for poor households; hence it is anchored at the highest level of government in Uganda, namely the Office of the Prime Minister (OPM).** A dedicated Department of Relief, Disaster Preparedness and Management (DRDPM) under the OPM is the agency responsible for disaster preparedness, management, coordination, risk reduction, prevention, and response. In addition, the country has a National Emergency Coordination and Operations Centre (NECOC) in charge of coordinating disaster response.

**Such high-level institutional anchoring of and provisions on disaster risk management (DRM) in the country's development policy and plans are in contrast with the absence of a DRM law.** The DRM bill, which has been under preparation since 2016, should embody and effectuate the existing DRM policy, taking into account existing laws, and should provide the overarching framework for future strategies and policy related to DRM and DRF.

The bill offers an opportunity to differentiate a state of disaster from a state of emergency (as indicated in the Constitution), which is essential for facilitating access to DRF instruments such as contingent credit. The bill is also an opportunity to include provisions on disaster risk finance, to address both natural and social disasters, and to clarify the roles and responsibilities of the Ministry of Finance, Planning and Economic Development (MoFPED) and other relevant stakeholders such as the private sector.

**Uganda has piloted several risk financing instruments, but its limited prearranged funds are insufficient to meaningfully address the scope of vulnerabilities and financing needs. Nor is there a clear DRF strategy that builds on the country's risk profile.** GoU's approach to disaster financing includes a few prearranged instruments.

A contingency reserve is legally provided for by Section 26 of the Public Finance Management Act 2015, with annual funding of 0.5% of the previous year's total appropriated national budget.<sup>2</sup> However, since the reserve's inception in 2018, it has received less than 0.2% (US\$17 million). NUSAF 3 piloted a risk financing mechanism that used remote sensing data to trigger a scale-up of benefits for poor and vulnerable households impacted by shocks. Since the inception of the pilot project, scale-ups have been triggered in 2017, 2018, 2019, and 2020, and they have provided support to a total of 75,457 beneficiaries. The GoU also resorts to supplementary emergency releases from the MoFPED of up to 3% of the total approved budget for the financial year; these are authorized by the Cabinet. The Uganda Agriculture Insurance Scheme (UAIS) is the main risk transfer instrument currently in place. Between its inception in 2016 and December 2020, it provided total insurance cover of UGX 1.5 trillion to nearly the nearly 250,000 farmers.

According to a World Bank (2019a) technical review of UAIS, approximately 65% of policies underwritten and 90% of the premium—and therefore premium subsidies—are for multiple peril crop insurance. This product has an average premium of UGX 180,000 (US\$48), which is unaffordable for smallholders, indicating that the premium subsidies are being captured by medium- and large-scale commercial producers.

**The Government of Uganda remains exposed to a significant disaster relief funding gap.** Based on indicative World Bank analysis, the annual cost of disaster relief is estimated to be US\$30.7 million on average. The impact of climate change and compound shocks like COVID-19 could increase the long-term average cost of relief by up to 80%—that is, to US\$55.3 million—and the cost for severe events could increase by nearly 300%. Considering the available prearranged funding, the GoU faces

a funding gap of about US\$14 million annually for disaster response. Disturbingly, there is a 20% chance that the funding gap could exceed US\$49 million (i.e., a chance of this occurring in one of every five years). To fill such a gap, the GoU relies heavily on donor funding for emergency response. However, the amount and timing of donor funding is unpredictable.

**The annual cost of scaling up the Labor-Intensive Public Works (LIPW) program is indicatively estimated at US\$4.7 million, with the costs largely driven by Karamoja and the Central region. GoU could prioritize horizontal scale-up (addition of new beneficiaries) to rationalize limited fiscal resources.** Vertical scale-up (extending the duration of support for existing beneficiaries) accounts for almost half the cost of scale-up. This is due to the combination of high drought risk exposure and high incidence of poverty in Karamoja. Both vertical and horizontal expansion require careful consideration of how best to scale down following a crisis. In addition, horizontal scale-up has several significant requirements: ex ante registration of potential beneficiaries in geographic areas not covered by the existing LIPW program in Karamoja, establishment of payment channels for disbursement of funds, and timely and accurate data for needs and vulnerability assessments to ensure effective targeting, deep institutional capacity, and strong coordination to manage the increase.

**A risk-layering strategy with prearranged funding for moderate to extreme shocks would be more cost-effective for GoU than the current approach.** Based on indicative analysis, risk layering could create annual average savings of US\$7 million compared to the base strategy. Potential savings could increase to US\$23 million and US\$117 million for moderate and severe loss events, respectively.

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2. Prior to the 2015 Amendment, the Public Finance Management Act provided for an appropriation of 3.5% and required 15% of the contingency reserve to be ring-fenced for financial response to natural disasters; 85% was earmarked for supplementary expenditure.

**Given its incomplete legal and regulatory framework and its few prearranged risk financing instruments (and few those lacking risk-informed design and allocations), Uganda’s ability to cost-effectively mobilize and deliver disaster relief may be compromised.** The following recommendations, which aim to increase the financial resilience of the country and of poor and vulnerable households, are offered for consideration by the Government of Uganda:

## **1. Policy framework and institutional capacity**

***Strengthen the policy framework for response to climate shocks and crises by adopting the DRM bill and developing a comprehensive disaster risk finance strategy.***

The DRM bill provides the overarching policy framework; the DRM policy and DRF strategy give substance to, and define the way to apply and enforce this law. This DRM bill also offers an opportunity to legally distinguish declaration of state of disaster from declaration of state of emergency, and to clarify the roles and responsibilities of MoFPED. The DRF strategy would particularly help determine the most suitable sources of finance and most appropriate instruments to respond to disasters of diverse types and severities (through risk layering), and thus to increase the efficiency, timeliness, and coherence of different financial mechanisms and the transparency of disaster response interventions.

***Improve the technical capacity of MoFPED in disaster risk finance and the operational capacity of the DRDPM and the Department of Refugees.***

Given the MoFPED’s responsibilities and roles in developing economic, financial, fiscal, and budgetary policies, in planning public investments, and in coordinating public expenditures, it plays an essential role in ensuring financial resilience

in disaster response and management. Thus it is important to build the ministry’s capacity to assess climate-related financial risks as part of the macroeconomic framework and budget planning. A technical assistance program for the MoFPED could start with training in the fundamentals of DRF and advance to more complex topics, such as the assessment and quantification of contingent liabilities from natural disasters and crises, design and structure of DRF instruments, etc. Capacity building for DRDPM and the Department of Refugees could focus on collection, management, and audit of data on disaster losses, damage, and expenditures.

## **2. Non-life insurance**

***Strengthen non-life insurance markets to enhance risk transfer by government, businesses, and households.***

GoU could expand UAIS to provide insurance products targeting small-holder farmers and herders, and it explore the use of agricultural extension services and Fin-Tech for marketing and distribution to ensure the premium subsidy provided by the GoU reaches the neediest. Public asset registries and public asset insurance guidelines could be developed to enable development of public asset insurance. Insurance solutions help increase funding after disasters and reduce the pressure on government, as needed funding is provided by insurers. Insurance solutions also provide more timely liquidity than donor aid—for example, index-based insurance can pay out in 14 to 30 days—and facilitate faster recovery of affected households, farmers, and businesses. By contrast, humanitarian grants take an average of 17 days to reach nongovernmental organizations (NGOs) after rapid-onset crises, and 80 days for slow-onset crises; national emergency funds on average disburse after 45–70 days, and the Central Emergency Response Fund (CERF) reaches NGOs after 90 days on average (Start Network 2019).<sup>3</sup>

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3. Estimates are from Start Network, “Start Fund: Filling a Gap in the Humanitarian Sector” (accessed August 2019), <https://startnetwork.org/start-fund>

The technical capacity of the local insurance market could be strengthened through training and technical assistance in agricultural insurance, including loss adjustment, crop cutting experiments, and marketing strategies targeted at the low-income population. Training could also aim to facilitate development and growth of the public asset insurance class following the issuing of public asset insurance guidelines.

***Strengthen the enabling environment for insurance by adopting the national insurance policy and micro-insurance regulation.***

The national insurance policy under development presents an opportunity to expand insurance awareness among and products to the majority small- and medium-scale farmers and to review the premium subsidy policy to ensure better targeting of scarce fiscal resources.

### **3. Risk finance**

***Strengthen existing prearranged financing instruments and consider additional instruments for moderate to severe shocks.***

GoU could strengthen the operational rules of existing contingency fund to optimize usage and consider new instruments such as contingent line of credit, which would strengthen the budget's resilience to shocks and provide liquidity in the event of an emergency with minimal impact on the country's credit rating. The funds could be used to respond to any peril that is declared a state of emergency; thus the importance of completing the legal DRM framework, which would clarify what constitutes an emergency. These risk retention instruments will help Uganda deal with low- to moderate-severity shocks.

### **4. Social protection system**

***Strengthen social protection systems to reduce vulnerabilities to shocks.***

Building on the successful implementation of NUSAF 3, which had a scalable component, GoU could prearrange financing to support safety nets in the aftermath of shocks through a risk transfer mechanism or by earmarking a portion of the existing contingency fund to support scale-up to people at risk of falling into poverty or to provide additional assistance to poor and vulnerable people affected by disasters.

Strengthening the shock-responsiveness of the social protection system could also involve expanding the national social registry to include vulnerable households that are not currently eligible for direct income support but that might need support in the aftermath of a disaster.

Additionally, it will be important to deepen financial inclusion through digital financial services, particularly mobile money payment, which has proved to be an effective channel to deliver resources to affected beneficiaries. Beyond payment, access to financial services will contribute to overall economic inclusion and empowerment. Facilitating saving for households will contribute to income smoothing in the face of idiosyncratic shocks, while introducing micro-insurance into social protection will contribute to asset protection.

# 1. ECONOMIC AND FISCAL IMPACT OF PAST DISASTERS

Uganda is vulnerable to multiple climatic hazards (droughts, floods, storms, landslides), as well as to earthquakes, epidemics, social unrest, and displacement shocks. Climate change is expected to increase the frequency and severity of weather-related disasters through more intense temperatures, more variable rainfall patterns, prolonged heat waves, and water scarcity. By 2059, annual temperatures in Uganda are expected to be 1.2°C to 2.5°C above the historical mean. Hot days are expected to occur on 15–43% of days by the 2050s and on 18–73% of days by end of century. Monthly annual precipitation is expected to increase in some areas of the country and to decrease in others, notably the north and

northeast. Annual precipitation is expected to fall by up to 25.9 mm in some areas and to increase by up to 32.5 mm in other areas.<sup>4</sup>

## 1.1. Climatic, social, and health-related shocks

In a global ranking of climate disaster risk, Uganda is 58th out of 181 countries.<sup>5</sup> It experienced total economic losses of over US\$3 billion between 1966 and 2020, the bulk of which were uninsured (table 1). In 2019, Uganda was ranked 158th out of 192 countries in terms of its readiness to improve resilience.<sup>6</sup> Among all shocks, drought has caused the greatest economic loss and affected most people due to its extensive impact on productivity, livelihoods, and food security. Epidemics and floods have been the most frequent; however, their impact has largely been localized, and flood impacts have mainly been damage to property and assets.

TABLE 1: IMPACT OF DISASTERS IN UGANDA BY TYPE OF PERIL 1966-2020

	Number of events	Population affected	Number of deaths	Damage (US\$, thousands)
<b>Drought</b>	10	4,975,000	194	1,739,000
<b>Earthquake</b>	6	58,100	115	92,318
<b>Epidemic</b>	40	345,774	1,898	89,375
<b>Flood</b>	30	1,290,459	1,864	1,119,410
<b>Insect infestation</b>	2	-	-	28,905
<b>Landslide</b>	12	152,255	601	887
<b>Storm</b>	8	18,852	60	362
<b>Total</b>	<b>108</b>	<b>6,840,440</b>	<b>4,732</b>	<b>3,070,257</b>

Sources: EM-DAT database, 1966-2020; NEMA (National Environment Management Authority); Axco; government reports; academic (peer-reviewed) reports.

Note: The table presents aggregate impacts across different disaster events. - = data not available.

4. World Bank Group, Climate Change Knowledge Portal, <https://climateknowledgeportal.worldbank.org/>

5. The World Risk Index score for Uganda is 8.63, reflecting a combination of high exposure and very high susceptibility, vulnerability, lack of coping capacities, and lack of adaptive capacities (Bündnis Entwicklung Hilft and RUB 2020).

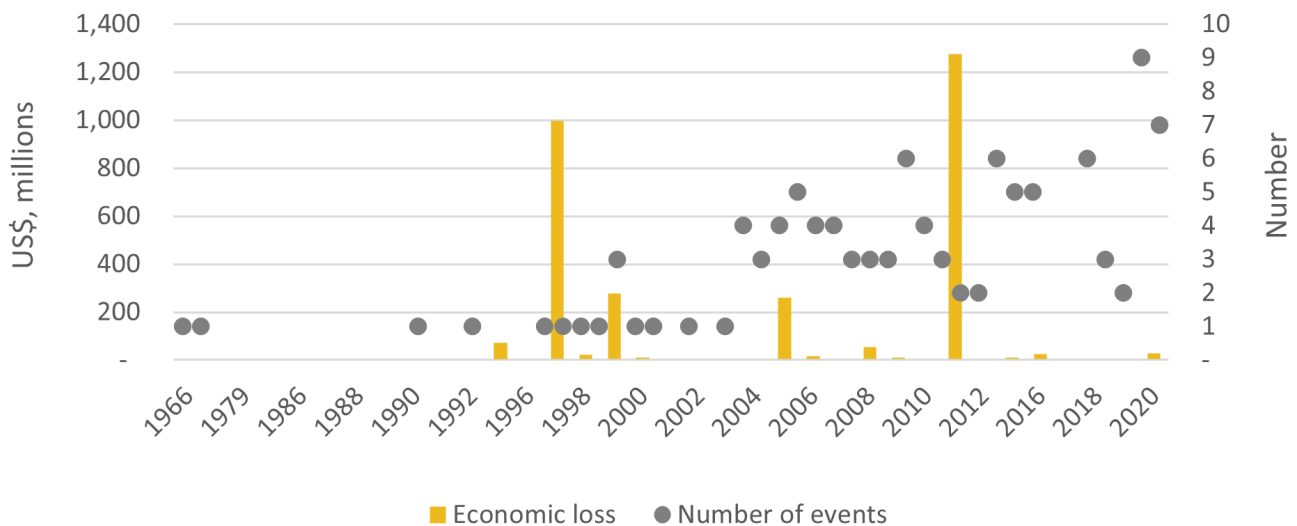
6. ND-GAIN (Notre Dame Global Adaptation Initiative), "Country Index," <http://gain.nd.edu/our-work/country-index>

The ND-GAIN Country Index summarizes a country's vulnerability to climate change and other global challenges in combination with its readiness to improve resilience. Readiness measures a country's ability to leverage investments and convert them to adaptation actions. ND-GAIN measures overall readiness by considering three components: economic readiness, governance readiness, and social readiness.

**Disaster events have been increasing in frequency over the past 20 years, with economic losses largely uninsured and driven by infrequent but severe loss years.** The annual economic losses due to disasters in Uganda are estimated at US\$87 million (UGX 309 billion), driven by severe losses in 1999 and 2005 and by very severe losses in 1997 (nearly

US\$1 billion) and 2011 (US\$1.3 billion). The bulk of these losses were uninsured. Prior to the year 2000, Uganda experienced about one disaster event per year, but since then the number of events per year has increased, reaching a high of nine in 2019 (figure 1).

FIGURE 1: ANNUAL ECONOMIC LOSS AND NUMBER OF DISASTER EVENTS IN UGANDA, 1966-2020



Sources: Calculations by World Bank staff based on EM-DAT database; government reports; academic articles..

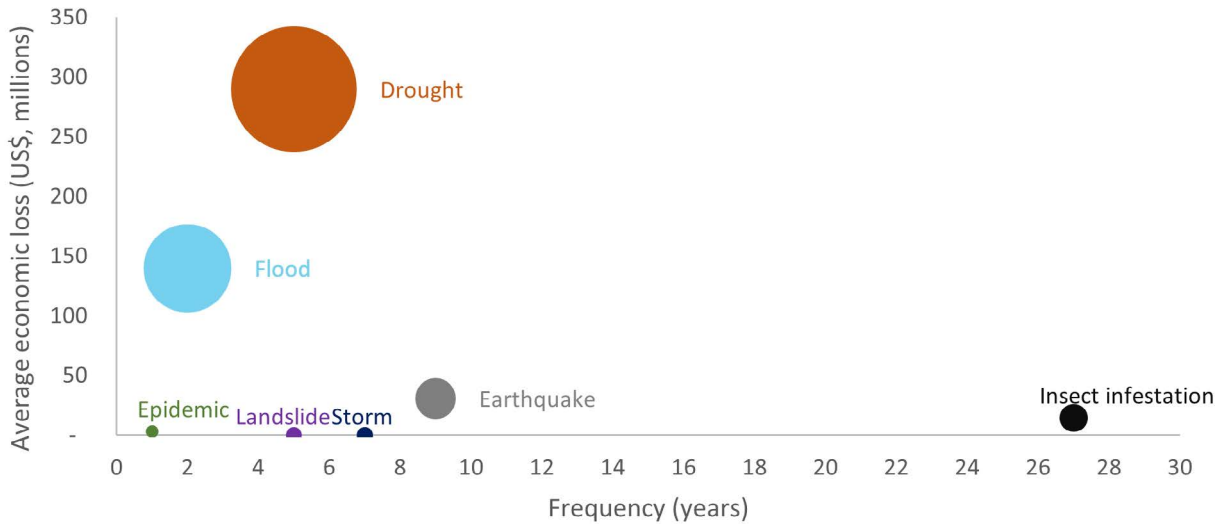
**Drought and flood are the most serious perils in Uganda. Droughts are of high severity and medium frequency, while floods are of medium severity but high frequency (figure 2).** Droughts occur in one of every five years, and each occurrence results in economic loss of US\$289 million on average. However, these figures mask great variability. Losses and damage from the 2010–11 drought are estimated at US\$1.2 billion. Floods occur in one of every two years and result in economic loss of US\$140 million on average, though again, the impact of a specific event can be more severe.

The 1997–98 El Niño floods caused infrastructure damage estimated at US\$740 million<sup>7</sup> (MoWE, 2015); it washed away roads and bridges, which isolated rural areas, causing food shortages and inflation. Earthquake, landslide, and storm are medium-frequency perils. Epidemics (cholera, meningococcal disease, measles, yellow fever) are very low-severity/high-frequency events, occurring nearly every year. Insect infestation is of low frequency and severity; however, its impact is disproportionately high among the rural and poor populations.

7. Adjusted to current US\$ values from US\$400 million in 1998 values



FIGURE 2: DISASTER RISK PROFILE OF UGANDA, 1966–2020

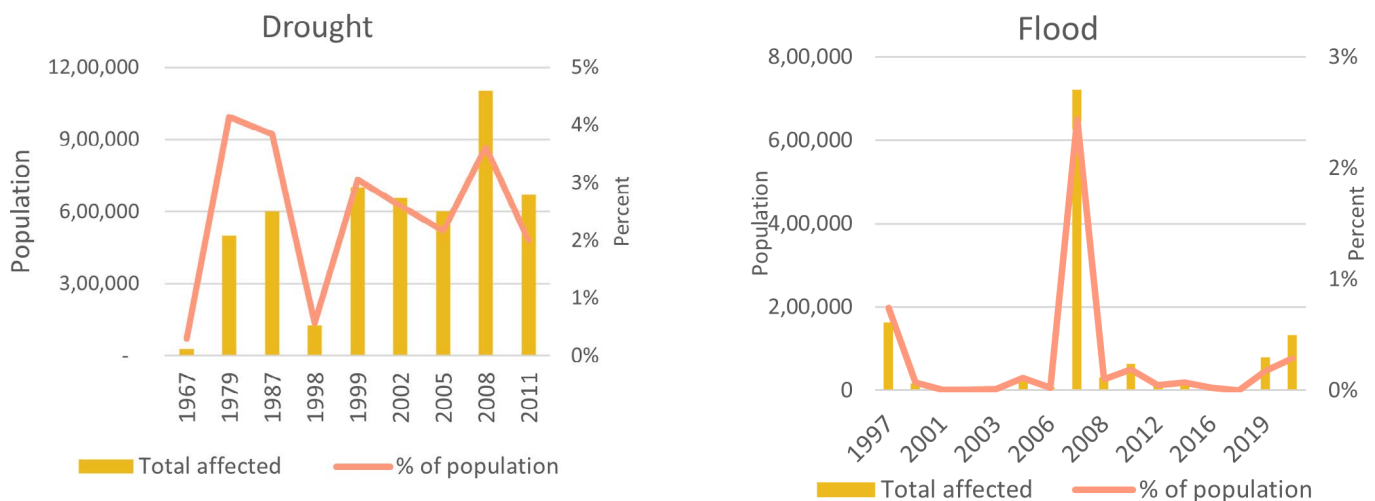


Sources: Calculations by World Bank staff based on EM-DAT database; government reports; academic articles; others.  
 Note: This empirical analysis provides average estimates based on historical occurrence. With more detailed data, probabilistic modeling could be done to determine the magnitude of losses for various return periods.

**Over the last 20 years, the population affected by drought has been relatively stable, while the population affected by flood has increased over the last three years.** Droughts have affected 2.5% of the population on average; however, notably severe droughts in 1979 and 2008 affected 4.1% and 3.6% of the population respectively. While the proportion of population affected by

drought is arguably stable over the years, the number of people affected by drought has been increasing in absolute terms. Floods have affected 0.3% of the population on average, although an extremely severe flood in 2007 affected 2.4% of the population. If the 2007 flood is excluded, the average share of the population affected by flood drops to 0.1% (figure 3).

FIGURE 3: POPULATION AFFECTED BY DROUGHT (LEFT) AND FLOOD (RIGHT) IN UGANDA

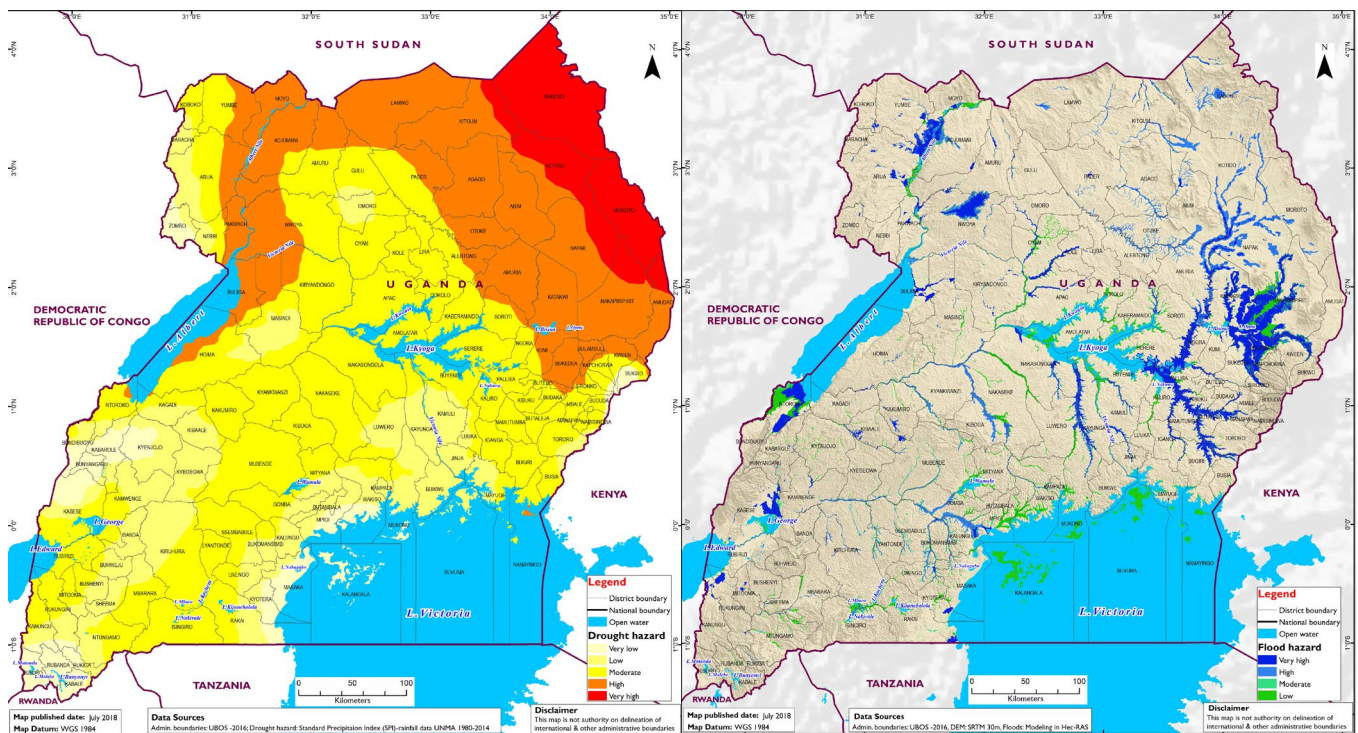


Sources: Calculations by World Bank staff based on EM-DAT database; government reports; academic articles.

**Droughts have an adverse impact on the country's economic growth and are widespread in the north and northeast.** Prolonged drought over 2002 to 2005 resulted in negative growth of the agriculture sector. Drought further led to an energy crisis,

which combined with a dilapidated road network resulted in negative growth of the manufacturing sector. Overall, the gross domestic product (GDP) growth rate declined from 8.7% in 2002 to 6.3% in 2005.<sup>8</sup>

**FIGURE 4: DROUGHT HAZARD (LEFT) AND FLOOD HAZARD (RIGHT) IN UGANDA**



Source: OPM 2019.

**The Government of Uganda (GoU) has been strengthening preparedness for flood response.** Uganda experiences both flash floods and riverine (slow-onset) floods, which are common in urban areas, low-lying areas, and along riverbanks and swamplands. As shown in the country climate risk profile, the areas most prone to floods are Kampala and northwestern and eastern Uganda.<sup>9</sup> GoU developed the National Action Plan for floods in March 2020. The total costs of the plan are estimated at UGX 4,593 billion (US\$1.3 billion).

Other key initiatives include piloting real-time/telemetric water level-monitoring stations and implementing a flood early warning system (FEWS) for River Nyamwamba. However, critical gaps remain: data are lacking for high-flow flood rating curves, there is no dedicated flood monitoring network and no integrated FEWS for major rivers and lakes, and capacity for emergency flood water treatment and other interventions is inadequate (MoWE 2021).

8. World Development Indicators database, <https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=UG>

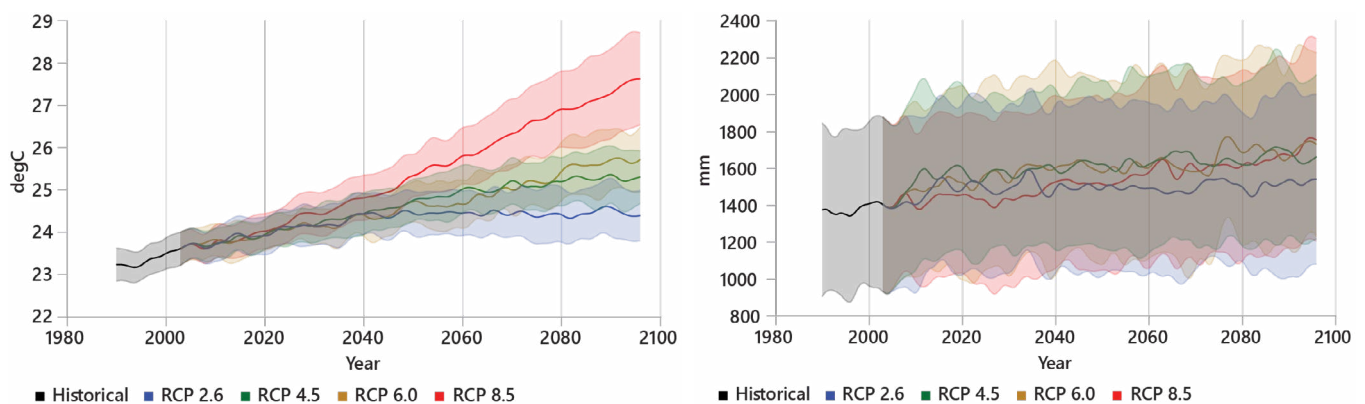
9. World Bank Climate Change Knowledge Portal, "Uganda," <https://climateknowledgeportal.worldbank.org/country/uganda/vulnerability>

**Landslides severely affect livelihoods, and an emerging legal precedence may increase government contingent liability due to landslide risk.** Landslide affects about 250 people annually and is highly localized; the Mount Elgon region along the eastern border with Kenya, and the Mount Rwenzori region along the western border with the Democratic Republic of Congo, are most at risk. A study on the economic impact of landslides in the Rwenzori Mountain region found that households lose an average of 20% of agricultural income and an average of 15% of total income due to landslides. In addition, the study found no formal or informal insurance mechanisms for protection against landslides in the region (Mertens et al. 2017). In May 2021, survivors of a particularly devastating landslide in December 2019 sued the central and local governments for infringing their constitutional rights to life, property, and a healthy environment by failing to “put in place effective machinery for dealing

with natural disasters.” The plaintiffs argued that government failed to resettle people from disaster-prone areas, failed to declare a state of emergency in the area, and failed to evacuate residents despite “a clear warning” from government meteorologists about potential landslides in late 2019 (UNDRR 2011).

**Climate change is expected to further increase the frequency and severity of disasters in Uganda.** Temperature rise is projected to increase across all emission scenarios throughout the end of the century. Increased temperatures will also increase aridity, with significant implications for human and animal health, agriculture, and ecosystems as well as energy generation. An increase in the intensity and frequency of extreme rainfall events, which is expected between the current and the mid-century period, is likely to impact major agriculture and livestock zones and transportation routes (figure 5).

FIGURE 5: ANNUAL TEMPERATURE (LEFT) AND PRECIPITATION (RIGHT) FOR UGANDA, 1986–2099



Source: World Bank 2021  
 Note: RCP = Representative Concentration Pathway.

**Epidemics are low-severity/high-frequency events; they occur nearly every year, and each event costs about US\$3 million (figure 2).** In the period 1966–2020, there have been over 40 epidemics caused by both viral and bacterial outbreaks, including cholera (17 occurrences), Ebola (4), meningococcal disease (5), and measles (2), as well as marburg virus disease, hepatitis E, and yellow fever. Over the last few decades, the GoU has transformed its

response strategy for public health emergencies, in part by the establishment of the Public Health Emergency Operations Centre (PHEOC) for central coordination of information on health emergencies and climatic disasters. PHEOC had a central role in addressing the COVID-19 pandemic. Details on the financial and economic response due to COVID-19 are presented in chapter 6.

**Social unrest has been increasing globally and costs on average 0.2 percentage points of a country’s GDP** (Hadzi-Vaskov, Pienknagura, and Ricci 2021). Costs of social unrest are difficult to quantify. However, a recent global study of 89 countries found that GDP remains on average 0.2% below pre-unrest levels for six quarters, with the impact predominantly experienced via manufacturing, services, and consumption. The impact increases to 1% after significant unrest events.<sup>10</sup> The World Health Organization (WHO) declared a global pandemic on March 11, 2020, and from April 16 to May 2, 2020, Uganda experienced its highest levels of social unrest in 15 years (ACLED 2020). The number of riots rose from around 80 in May 2020 to around 110 by the third quarter of 2021.<sup>11</sup> Social unrest is heightened during shocks, including natural disasters or significant economic adjustments (Besley, Collier, and Khan 2018). The compounding and endogenous nature of social phenomena makes them difficult to consistently measure. However, emerging techniques leveraging artificial intelligence (AI) and data science are being used to meet the challenge of forecasting and explaining social phenomena; see annex C for more information.

**Uganda continues to experience significant displacement shocks, which will cost an estimated US\$800 million in 2023 (UNHCR 2022).** Uganda hosts the third-largest number of refugees globally (the highest in Africa) (UNHCR 2018b). There are currently about 1.53 million refugees living in Uganda, and there is an inflow of roughly 12,000 new refugees a month, primarily from South Sudan (61%) and the Democratic Republic of Congo (28%). The risk of further displacement shocks to Uganda remains high due to existing levels of fragility in the Great Lakes and Horn of Africa regions. The Fund for Peace’s Fragile States Index (table 2) is unverified in terms of predictive accuracy, but the index could be complemented by emerging social science–informed predictive techniques, which would enable earlier action to respond to displacement shocks. These techniques would also provide evidence on priority activities to minimize the impact of displacement on the poor and vulnerable and optimize development impact. See annex C for more information on how the World Bank is leveraging AI methods.

TABLE 2: FRAGILE STATES INDEX FOR SELECTED GREAT LAKES AND HORN OF AFRICA COUNTRIES

Country	Fragile States Index value	Situation outlook
South Sudan	109	Improving (4 <sup>th</sup> most fragile in the world)
Somalia	111	Worsening (2 <sup>nd</sup> most fragile)
Congo, Dem. Rep.	108	Improving (5 <sup>th</sup> most fragile)
Burundi	97	Improving (16 <sup>th</sup> most fragile)
Uganda	93	Worsening (24 <sup>th</sup> most fragile)
Horn of Africa average	98.3	Improving

Source: Haken and Fiertz 2018, 30–41; fragile states index values are from Fragile States Index, “Country Dashboard,” <https://fragilestatesindex.org/country-data/>. Note: The Fragile States Index draws on indicators representing the measures of Cohesion, Political, Economic, and Social phenomena

10. The study considered 57 emerging market and low-income countries and 32 advanced economies (Hadzi-Vaskov, Pienknagura, and Ricci 2021).

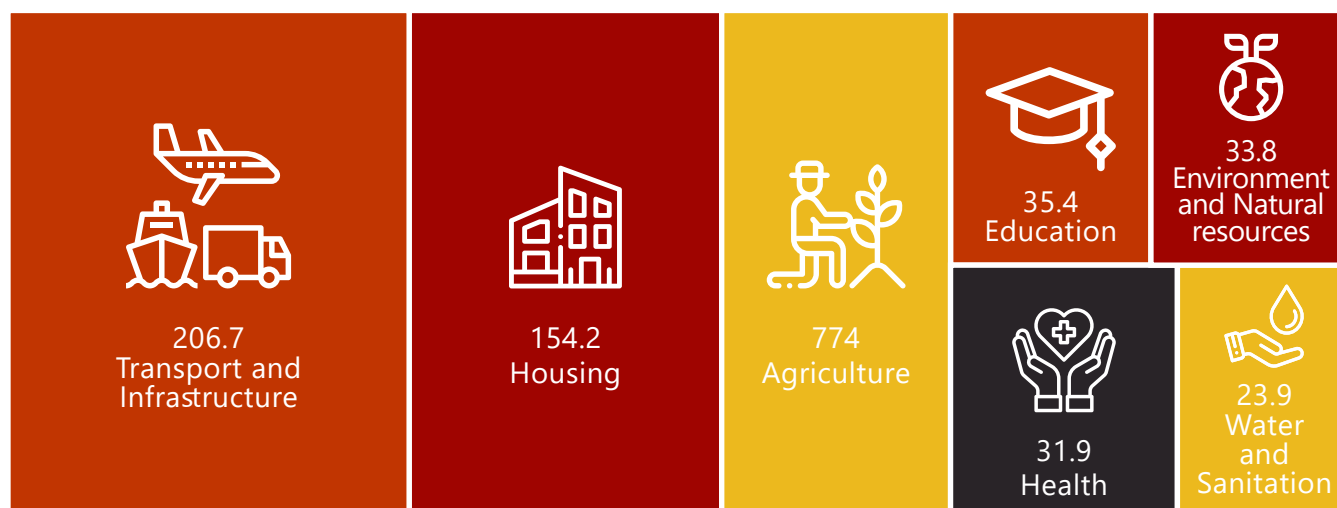
11. ACLED, CDT Spotlight: State Force in Uganda, <https://acleddata.com/2020/05/07/cdt-spotlight-state-force-in-uganda/>

## 1.2. Sectoral impact of disasters

**Annual GDP performance declined by 3.5% on average between 2010 and 2014 due to climatic shocks (OPM 2020).** In 2020 disasters caused direct economic losses of UGX 563.24 billion (US\$ 158.7

million), up 14% compared to the previous year and equivalent to 0.42% of Uganda's nominal GDP. Transport, housing, and agriculture were the most affected sectors (figure 6). In addition, productive sectors like water and energy are also significantly affected by climate and weather variability.

FIGURE 6: DIRECT ECONOMIC LOSSES DUE TO NATURAL DISASTERS IN 2020 (UGX, BILLIONS)



Source: OPM 2020.

### 1.2.1. Agriculture and food security

**The agricultural sector is the main employer in Uganda and a major contributor to national GDP.**

The sector contributes about 25% to the national GDP (22.5% in FY2013/14). Agriculture-based products (both primary and processed products) accounted for about 45% of exports in FY2018/19. The sector also employs about 64% of Ugandans (and 72% of young Ugandans) and provides the bulk of raw materials for the predominantly agro-based manufacturing sector (World Bank 2020b). The bulk (85%) of producers are subsistence farmers—smallholders who own an average of 2 ha of land and produce a wide range of food and cash crops, including coffee, tea, sugar, edible oils, cotton, tobacco, plantains, corn, beans, cassava,

sweet potatoes, millet, sorghum, and groundnuts. Livestock producers typically rear cattle, goats, sheep, pigs, and poultry.

**Extreme events such as droughts have caused significant losses to the agriculture sector, with impact in the recent past in the range of 1–7% of GDP (MoWE 2015).** Livestock is a driver of agricultural losses (table 3). Uganda could experience losses equivalent to US\$1.5 billion in food crops and—due to a 10–50% reduction in yield of arabica and robusta coffee by 2050—equivalent to US\$1.4 billion in agricultural exports. Foreign exchange earnings could reduce by US\$15–US\$80 million per year (World Bank 2021a).

TABLE 3: ESTIMATED DAMAGE AND LOSSES IN THE AGRICULTURE SECTOR, 2010–13

Subsector	Impact	UGX, million				
		2008	2010	2011	2012	2013
<b>Crops</b>	Losses: production	166,800	547,250	460,479		
<b>Livestock</b>	Losses: deaths		39,608	66,596		
	Losses: production		256,755	590,778	52,248	35,097
	Losses: higher production costs		41,274	44,130		
	<b>Total</b>	<b>166,800</b>	<b>884,887</b>	<b>1,161,983</b>	<b>52,248</b>	<b>35,097</b>

Source: World Bank 2019.

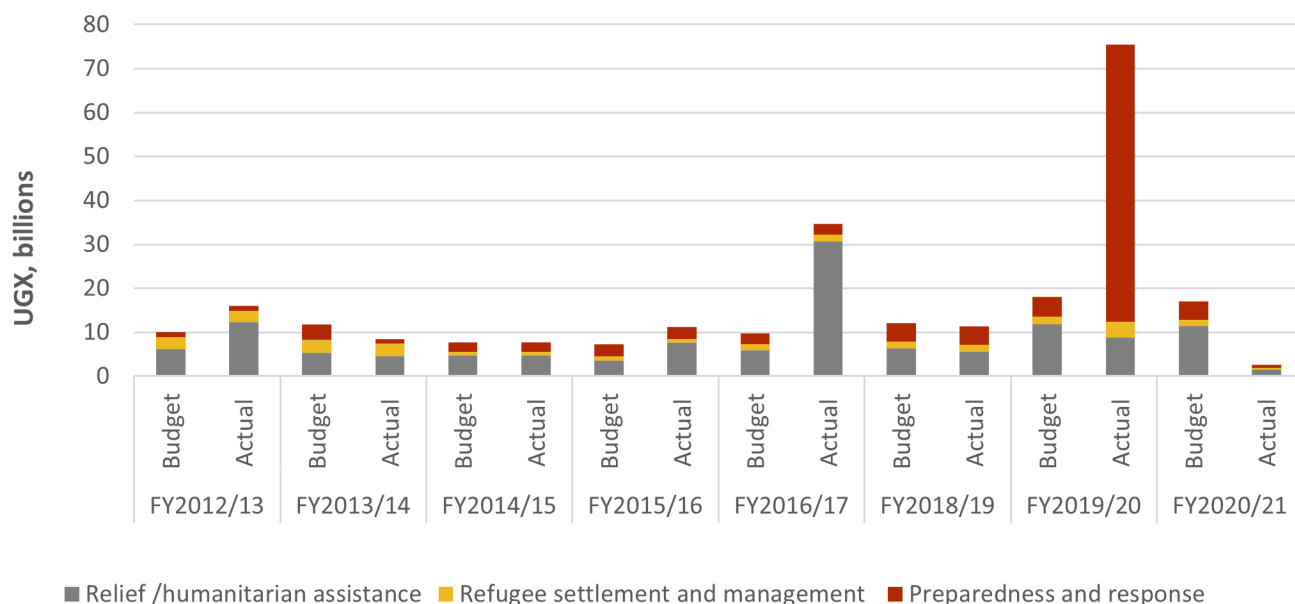
### 1.2.2. Energy

While energy facilities are exposed to earthquake, landslide, windstorm, and lightning, heavy reliance on hydropower makes the sector very sensitive to droughts. The energy sector in Uganda is composed of petroleum, hydroelectric power, biomass, and renewable energy sources. Any decrease in the water level of Lake Victoria is reflected in the reduction of hydroelectricity supplies produced by the two downstream dams, Nalubale and Kiira (Kaggwa, Hogan, and Hall 2009). The 2005–06 drought reduced effective hydropower generation from an installed capacity of 300 MW to 120 MW by 2007. As early as May of 2005 the resulting shortage of power led to a power crisis, with load shedding and higher costs. Government estimated the production loss at 148 GWh, equal to over UGX 37 billion, excluding other costs and losses involved in emergency energy responses and industrial and institutional losses due to power cuts (Kasimbazi 2013). An assessment of socioeconomic impact of the 2010–11 drought estimated total losses at UGX 106.3 billion due to higher costs of electricity generation. The load shedding caused significant production losses and higher costs of production for productive sectors, which were estimated UGX 3.8 billion for the sugar sector alone (OPM, 2012).

### 1.3. Fiscal impact and contingent liabilities

Disaster and crises create significant shocks to the national budget; in FY2016/17, for example, there were supplementary budgets of up to UGX 25 billion and foregone tax revenue of UGX 1.8 billion. Between FY2016/17 and FY2018/19, GoU allocated an average of UGX 966 billion (US\$272.2 million) per year toward disaster-related expenditures. Trends in recurrent expenditure (figure 7) show that a significant proportion was spent on relief, most of which was financed through supplementary budgets. The amount spent by the Office of the Prime Minister (OPM) in responding to disasters in 2007 was UGX 15.9 billion (US\$4.6 million), which increased nearly fourfold to UGX 68.8 billion (US\$19.4 million) in 2008. In FY2015/16, a supplementary budget of UGX 5 billion (US\$1.4 million) was disbursed to OPM, of which UGX 4 billion (US\$1.12 million) was directed toward provision of relief for disaster victims. In FY2016/17, a supplementary budget of UGX 25 billion (US\$ 7.04 million) was directed toward provision of relief to disaster victims. The practice of relying on supplementary budgets contributes to poor budget performance for the GoU. In years when actual expenditure is less than approved budget, the low budget performance is attributed to insufficient funds and associated budget cuts.

FIGURE 7: TRENDS IN OPM RECURRENT DISASTER EXPENDITURE, FY2012/13 TO FY2020/21



Source: CSBAG 2018; NPA 2021.

Note: Figures exclude Government of Uganda development/capital expenditure on disaster preparedness, mitigation, and prevention, which includes acquisition of land to resettle displaced persons, purchase of motor vehicles, and construction, maintenance, or acquisition of buildings.

**At subnational level, districts can reallocate up to 50% of conditional grants within the Poverty Alleviation Funds (PAF) to finance response to flood. However, the allocation of PAF funds to the affected districts is insufficient to meet preexisting needs, meaning that availability of funds for emergency response is limited.** In addition, the reallocation process requires districts to change their work plans—for example, from drilling boreholes to water disinfection—which is a time-consuming process. Finally, budgeted funds from GoU do not always materialize; for example, the 2007 budget provided for UGX 20.755 billion (US\$12.13 million), but this was not disbursed to the districts (World Bank 2014).

**A risk-sensitive review of Uganda’s budget shows that disaster risk management (DRM) is largely**

**domestically funded, and that the response category is the most severely underfunded (Figure 8) (Development Initiatives 2019).**<sup>12</sup> Domestic finance is the main source of investments in prevention activities, while external finance is the main source for recovery activities. Overall, between FY2016/17 and FY2018/19, GoU annually allocated an average of UGX 7 billion (US\$1.97 million) to disaster response and relief, and UGX 47 billion (US\$13.24 million) to disaster recovery. The bulk of disaster-related funding was allocated to prevention (UGX 710 billion, or US\$200 million) and preparedness (UGX 202 billion, or US\$56 million) (Development Initiatives 2019). To ensure appropriate disaster risk management, there is a need to strengthen risk assessment and financial planning for better allocation of resources across all four risk categories.<sup>13</sup>

12. Disaster expenditures are categorized within four phases: prevention, preparedness, response/relief, and reconstruction/recovery. Prevention and preparedness constitute pre-disaster activities, and the latter constitute post-disaster crisis management activities.\

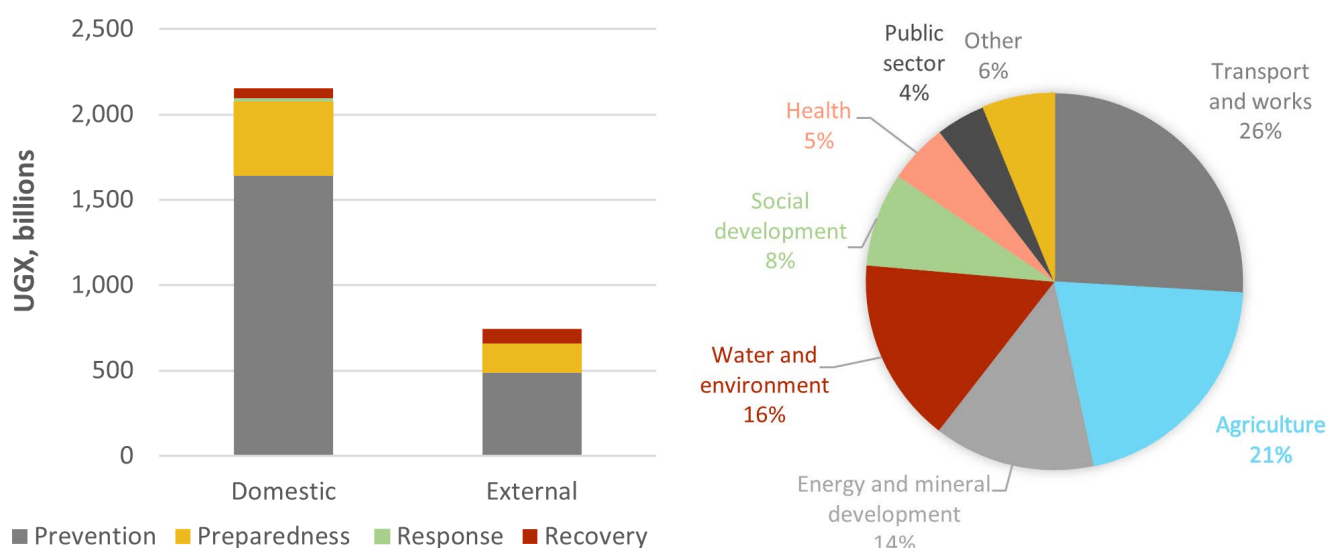
13. The methodology and four risk categories are based on the Sendai Framework and OECD Development Assistance Committee (DAC) disaster risk reduction (DRR) policy marker for tracking and marking spending on DRR-related activities. See OECD, Development Co-operation Directorate, DAC (2017).

**Funding is concentrated in a few sectors, with little priority given to human and social development sectors-an arrangement that reveals possible lack of balance and inadequate financial planning.**

About two-thirds of disaster-related funds were allocated to works and transport, agriculture, and energy and mineral development. Meanwhile, sectors like education, social development, and

health, which are vital for building resilience and reducing the impact of disasters, were given little priority. More recently, in response to COVID-19, UGX 1.77 billion (US\$0.5 million) has been allocated to the agricultural sector and will be channeled through the Uganda Export Promotion Board for marketing export crops to regain market share once supply chains open (OPM 2020).

**FIGURE 8: DISASTER-RELATED FUNDING BY SOURCE, CATEGORY, AND SECTOR, FY2016/17 TO FY2018/19**



Sources: Development Initiatives 2019, based on MoFPED 2016/17–2018/19 budgets.

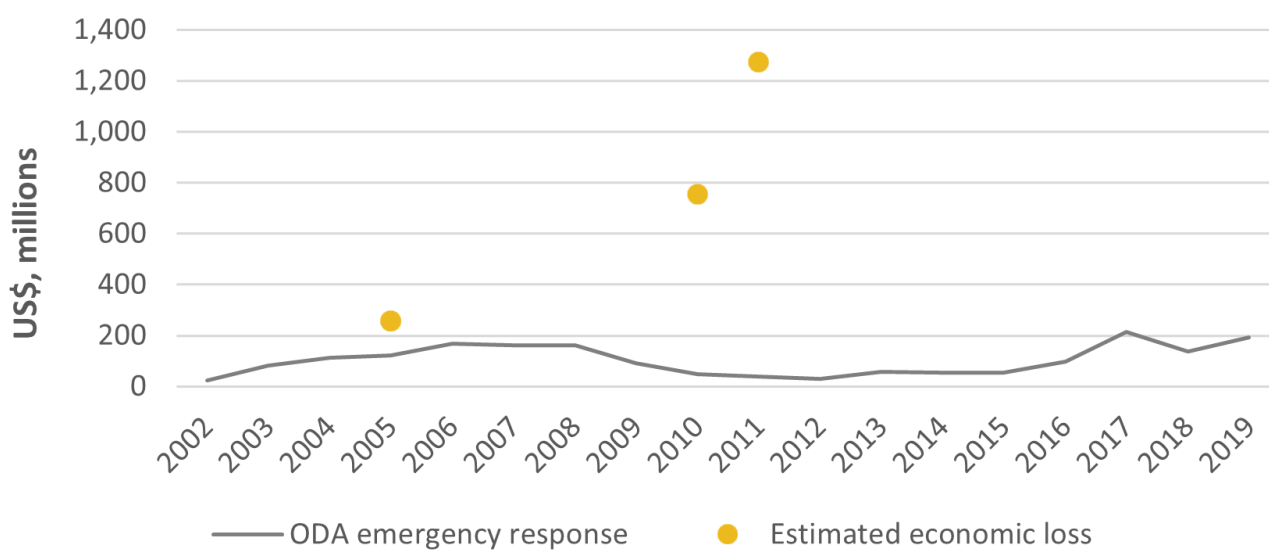
**Official development assistance to Uganda for emergency response is highly variable, with significant gaps in notable disaster years (Figure 9).** Donor spending on food aid (which is the key use of donor funds in Uganda) averaged UGX

276.9 billion (US\$78 million) a year between 2001 and 2014, ranging from UGX 31.24 billion (US\$8.8 million) in 2012 to UGX 524.3 billion (US\$147.7million) in 2008, during the drought in Karamoja.





FIGURE 9: OFFICIAL DEVELOPMENT ASSISTANCE FLOWS FOR EMERGENCY RESPONSE IN UGANDA, 2002–19



Source: OECD.Stat Credit Reporting System database (accessed November 29, 2021), <https://stats.oecd.org/Index.aspx?DataSetCode=crs1>  
 Note: ODA = official development assistance.

### 1.4. Key messages

- Uganda’s climate disaster risk is high and its readiness to improve resilience is low. Disasters have been increasing in frequency over the past 20 years, with economic losses largely uninsured and driven by infrequent yet severe loss years.
- Climate change is expected to increase the frequency and severity of weather-related disasters through more intense temperatures, more variable rainfall patterns, prolonged heat waves, and water scarcity.
- Drought and flood are the most serious perils in Uganda. Floods occur nearly every two years and droughts nearly every five years. Droughts have a recurrent and prolonged negative impact on economic growth, while floods exacerbate urban poverty. Landslides severely affect livelihoods, and an emerging legal precedence may increase government contingent liability due to landslide risk.

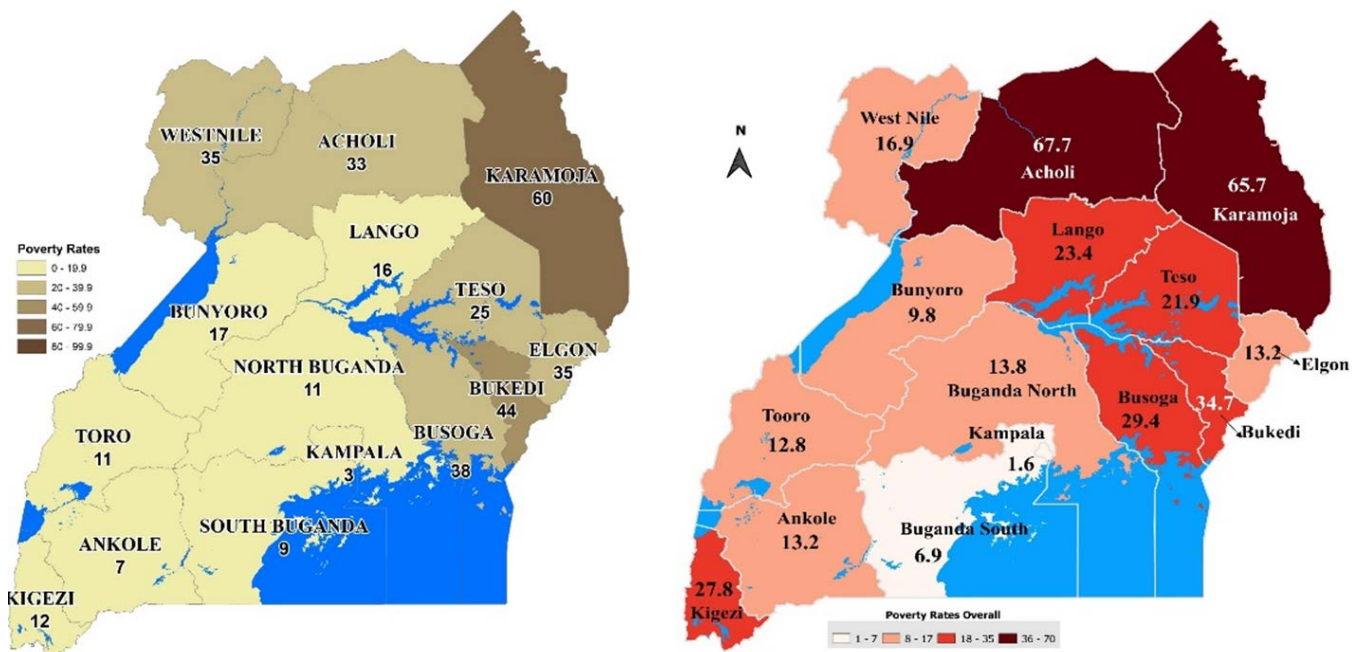
- Annual GDP growth declined by 3.5% on average between 2010 and 2014 due to climatic shocks. More recently, the impact of climate shocks is estimated at between 1% and 7% of GDP, with transport, infrastructure, agriculture, and housing the most affected sectors.
- Natural disasters compound already existing multidimensional social risk.
- The risk of further displacement shocks to Uganda remains high due to existing levels of fragility in the Great Lakes and Horn of Africa regions.
- Disasters and crises create significant shocks to the national budget.
- Disaster risk management is largely domestically funded. Among disaster response phases, the response category is the most severely underfunded. Sectors like education, social development, health, and social protection are vital in building resilience and reducing poverty but are given little priority.

## 2. IMPACT OF SHOCKS ON UGANDANS AND ASSESSMENT OF SOCIAL AND FINANCIAL PROTECTION

**Uganda's growth is not adequate to meet the country's development ambitions.** In 2018 and 2019, before the COVID-19 outbreak, the GDP growth rate was 6.2% and 6.8% respectively. The pandemic has reversed this growth trend. Uganda's real GDP grew by 2.9% during FY2019/20, a decrease of 3.3% compared to the pre-COVID-19 forecast. A slight rebound was recorded in FY2020/21, when the GDP growth rate was 3.4% (World Bank 2021c). However, given the expected population growth over the next 10 years, the GDP growth rate needs to exceed 8% if Uganda is to have a chance of reaching lower-middle-income country status by 2030 (World Bank 2020b).

**The country records low human capital development indicators.** As of 2020, the country ranks 154 out of 174 countries in the Human Capital Index.<sup>14</sup> According to the Uganda Bureau of Statistics (UBOS 2021), about 20.3% of Ugandans live below the poverty line. Poverty rates vary historically by region and rural/urban status, ranging from a low of 11.7% in urban areas to a high of 23.4% in rural areas. The increase in poverty is more pronounced in rural areas, particularly in the subregions of Karamoja, Acholi, Bukedi, and Busoga. Most of the poor are found in the Busoga subregion, followed by Bukedi and Acholi. The COVID-19 pandemic has worsened the country's poverty situation. At the end of 2021, 25% of the population was living below the poverty line, compared to 21.9% at the start of the year, meaning that around 1.8 million people had recently returned to poverty. Figure 10 demonstrates the spatial distribution of poverty rates and a reversal in the declining trend in poverty rates seen across most of Uganda.

FIGURE 10: PROPORTION OF POOR IN UGANDA, 2016/17 (LEFT) AND 2019/20 (PERCENTAGE)



Source: UBOS 2021.

14. In 2020, Uganda's Human Capital Index score was estimated at 0.38. World Bank, <https://databank.worldbank.org/source/human-capital-index>

## 2.1. Vulnerability of the poor to shocks

**Many households in Uganda remain vulnerable in part because they earn their living in the informal and subsistence agriculture sectors.** About 55% of households are informal earners with limited savings. Nearly 39% of households operate in the subsistence economy; of these, 60% are in subsistence agriculture (UBOS 2021). Uganda continues to face significant gender inequality in economic outcomes, with the gender gap in labor force participation standing at 5% before the COVID-19 outbreak and increasing to 7% during the pandemic. Women's lack of economic empowerment not only imperils growth and poverty reduction; it also has a host of other negative impacts on the well-being of entire households, given that gender equality has the potential to increase human capital wealth by up to US\$1,619 per capita. This is an increase of 11.8% over the baseline value of Uganda's total human wealth per capita (World Bank 2021c).

**While a large proportion of the population (89%) is considered food secure, declining yields of food crops are contributing to rising food insecurity in Uganda** (GFDRR 2019). Smallholder farmers are especially vulnerable to food insecurity, which is largely driven by droughts and floods because of the high dependence on rain-fed agriculture (Turyahabwe et al. 2013; Barasa 2018). About 68.1% of Ugandans are employed in the agricultural sector, the majority of them youth (72%) (UBOS 2021). Rainfall conditions are highly predictive of agricultural production and food security. Decreased crop production and other perils have caused rural households severe economic losses coupled with food insecurity. About 1.2 million people depend on fishing as a key livelihood. Increased aridity and drought along with increased temperatures have made fish breeding and restocking efforts more challenging, have further reduced available fish stock, and have increased pressures of food insecurity (World Bank 2021a). Rising food insecurity has implications for malnutrition in the long-term. Malnutrition has irreversible effects on education and health that can reinforce the intergenerational transmission of poverty.

**The incomes and livelihoods of the poorest communities are likely to be more sensitive to displacement and climatic risks and variability.** Poor households are susceptible to income fluctuation, and since the COVID-19 outbreak 91% of households have reported reduced income (or losses) from at least one of their sources of livelihood (UBOS and World Bank 2020). Uganda's population is rapidly expanding and is expected to grow to over 100 million by 2050. Demographic expansion exacerbates pressure to distribute finite resources equitably. A deteriorating natural resource base and ecosystem, reduced access to land due to a rising population, and increased threats of conflict and economic crises exacerbate risk for poor and vulnerable households who already have limited capacity to cope with climate change and human displacement.

## 2.2. Impacts of shocks on the poor and vulnerable

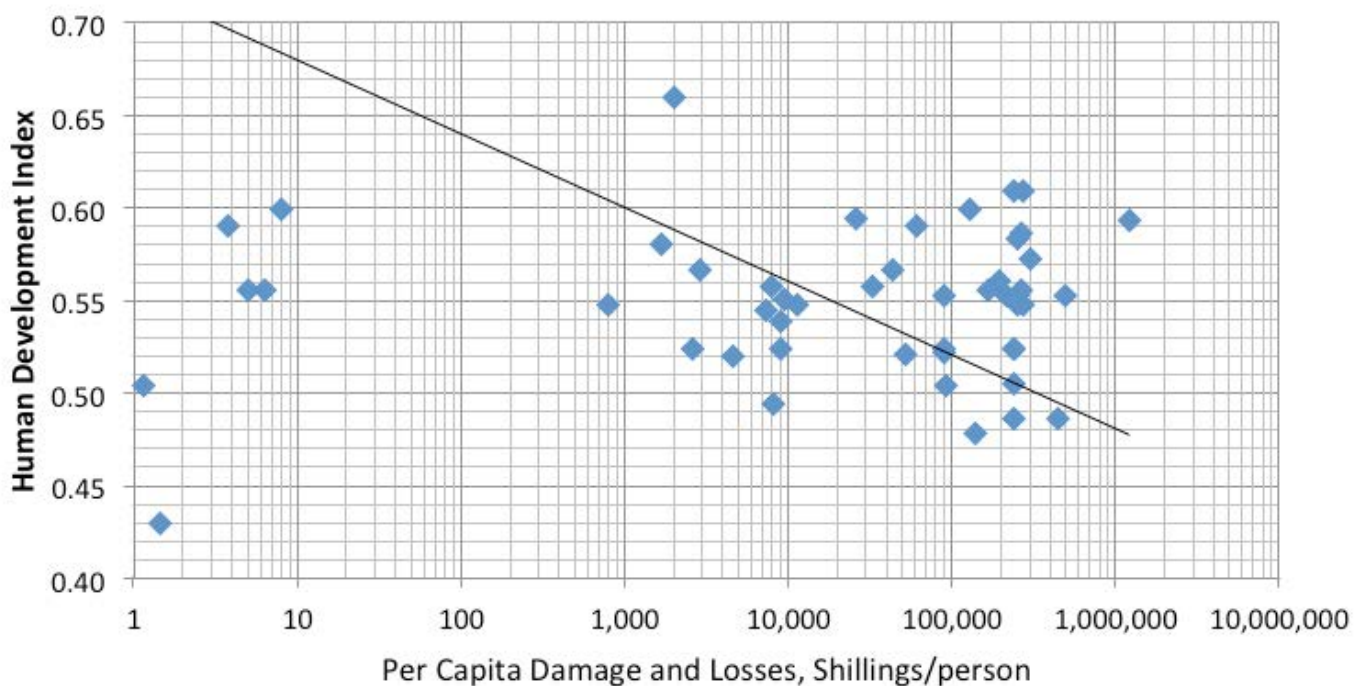
**Uganda made significant progress in reducing poverty between 1993, when over 50% of the population lived below the national poverty line, and 2013, when the share was less than 20%. However, climate disasters in 2016 reversed this trend.** The poverty rate increased to nearly 24%, and the Uganda Bureau of Statistics attributed this increase to increased prices of food resulting from prolonged drought (UBOS 2018). Pest infestations as well as drought in 2016 and 2017 largely explain the increase in poverty incidence between FY2012/13 and FY2016/17 from 19.7% to 21.4% (under the national poverty line), as most of the increase was accounted for by households engaged in agriculture (World Bank 2020b).

**The poorest are predominantly the most vulnerable to climate-related natural disasters, and the most severely affected by them.** The reasons for this include overexposure, higher vulnerability, and less ability to cope and recover (Hallegate et al. 2017). An assessment of the socioeconomic impacts of the 2010–11 drought found that the most severe effects occurred in districts with the lowest human development conditions.

Generally, higher values of damage and losses occurred in districts where the Human Development Index score is lowest (figure 11). Notably, current and future increased risk from floods and droughts are found in areas of existing poverty—a situation that has serious consequences for local economies, food security, and human development. More than 80% of households

most vulnerable to climate change reside in the Northern region, where they rely heavily on low-productivity subsistence farming. Studies show that in low-income countries like Senegal, households affected by natural disasters are 25% more likely to fall into poverty (Hallegate et al. 2017).

FIGURE 11: RELATIONSHIP BETWEEN DAMAGE AND LOSSES PER CAPITA AND HUMAN DEVELOPMENT INDEX SCORE FOLLOWING THE 2010–11 DROUGHT



Source: OPM 2012

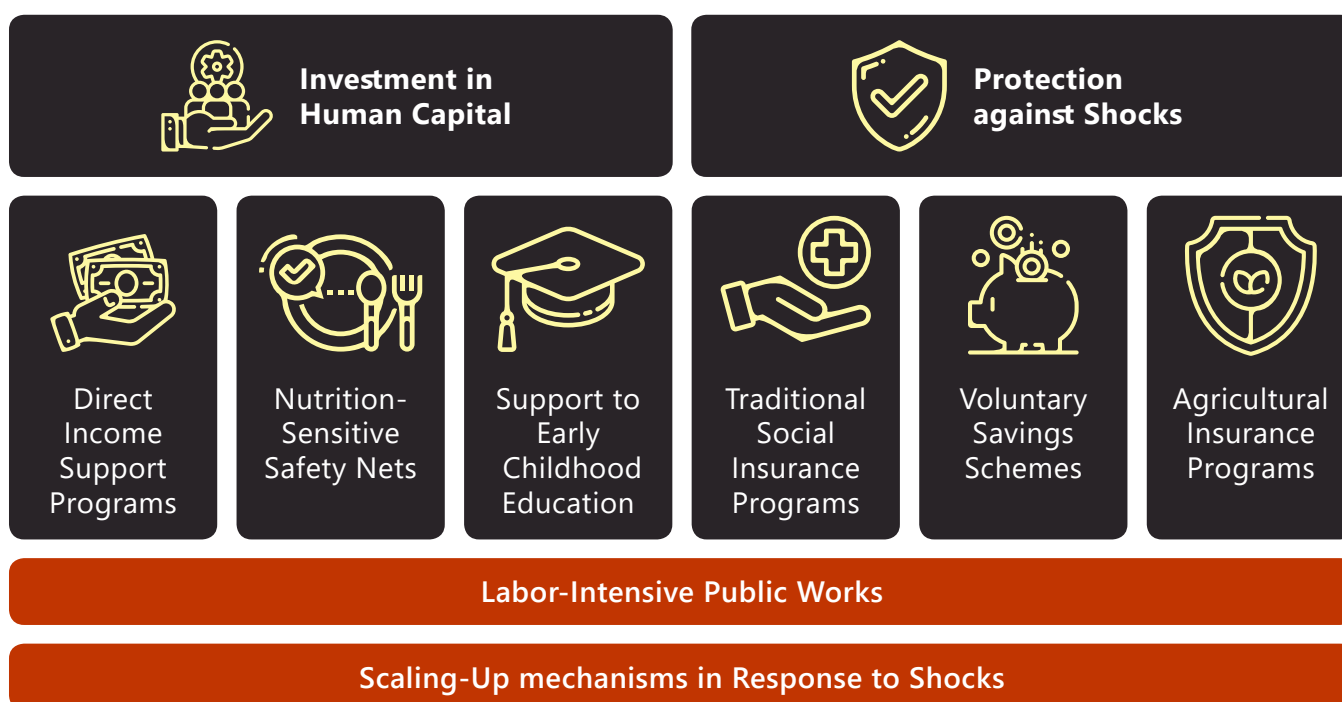


## 2.3. Social protection systems in Uganda

Uganda’s vision for social protection includes a range of mechanisms to invest in livelihoods and human capital as well as to protect poor and vulnerable households against shocks (figure 12). Uganda approved its national social protection policy in 2016. This policy aims to establish comprehensive social protection services to address risks and vulnerabilities; these services include direct income support programs and a scaling-up mechanism for shock response. Direct

income support in Uganda is currently composed of two major and several minor programs. The two major programs are the Senior Citizens Grant (SCG) and cash grants given through NUSAF 3<sup>15</sup>. The scaling-up mechanism for shock response is currently constrained by the lack of a robust and flexible payment system, which is needed to allow timely expansion of coverage in the event of shocks, and by the lack of a risk financing mechanism, which is needed to provide timely and predictable funding for response to shocks.

FIGURE 12: UGANDA’S VISION FOR SOCIAL PROTECTION



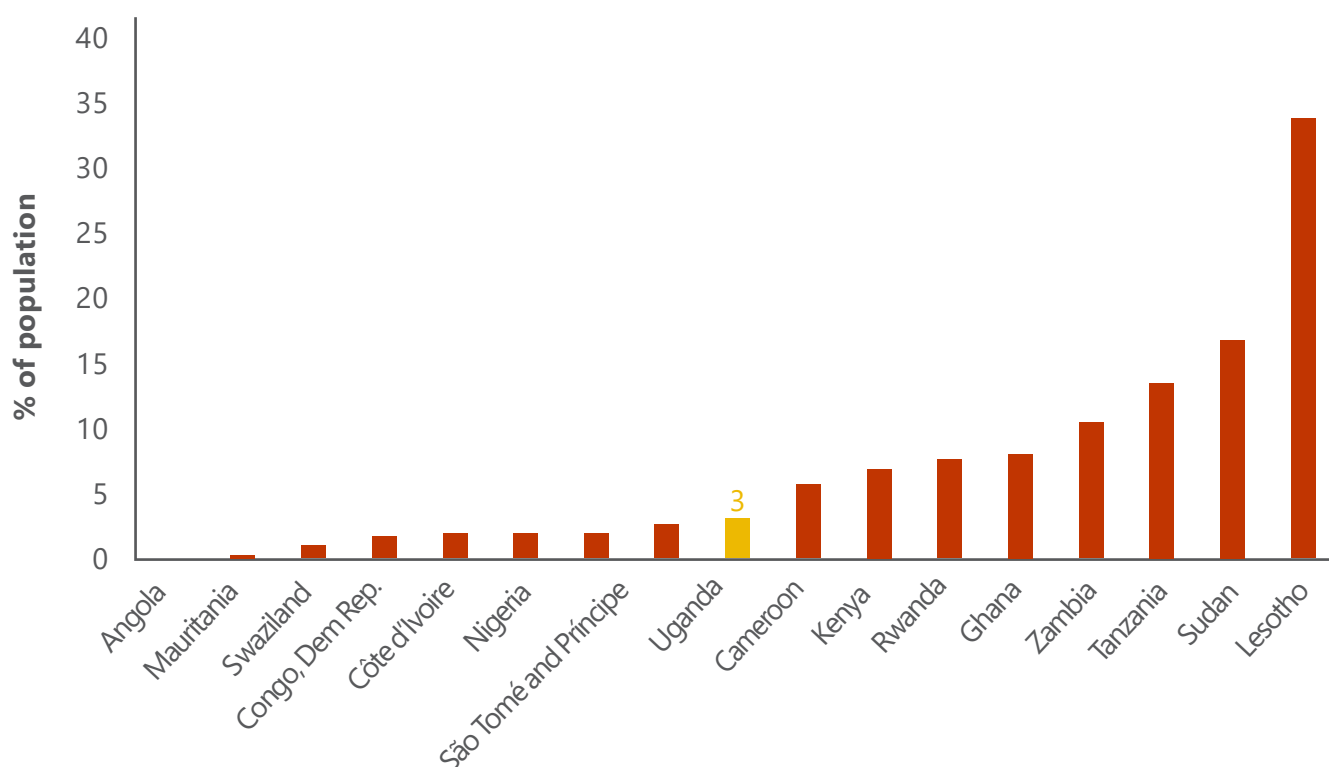
Source: World Bank 2020b.

**The coverage and design of social protection programs are currently insufficient to meaningfully address the range and scope of vulnerabilities to shocks in Uganda.** The existing direct income support programs in Uganda have low coverage; the two main programs reach

only 3% of the population (figure 13). This is significantly below the average in other East African countries, where the share is 9% of the population, and in low-income countries, where it is 7% (World Bank 2020b).

15. NUSAF is the Northern Uganda Social Action Fund, a US\$130 million project financed by the World Bank. It builds on findings by the World Bank Group’s Social Protection and Labor Global Practice showing that safety net systems can provide additional support in times of crisis, help to defend the welfare of vulnerable households, and enable them to develop strategies to build their resilience.

FIGURE 13: COVERAGE OF DIRECT INCOME SUPPORT OF MAIN SOCIAL PROTECTION PROGRAMS IN SELECT AFRICAN COUNTRIES



Source: World Bank 2020b.

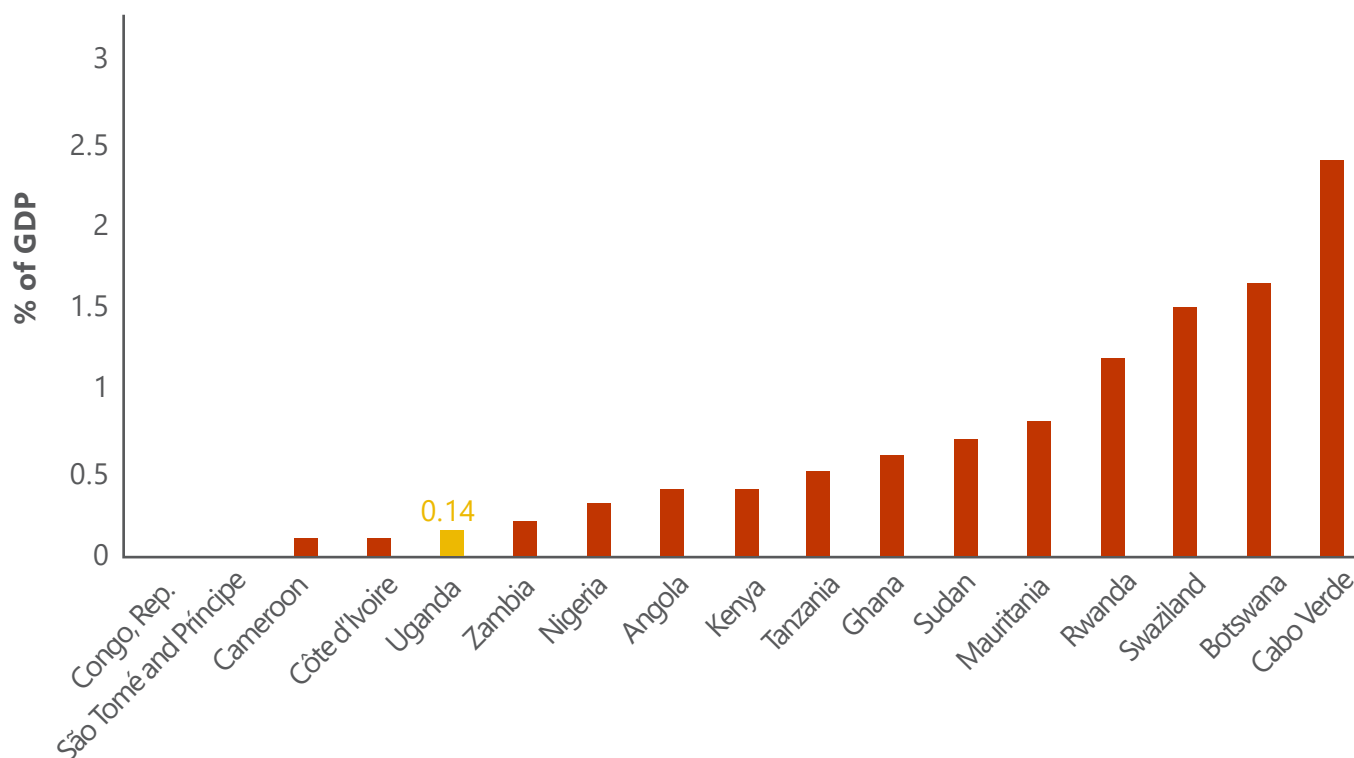
**Overall spending through the main direct income support programs in Uganda is low.**

Spending on NUSAF and SCG, both absolute spending and spending as a percentage of GDP, has increased over time but remains low compared to needs-and to levels of spending by neighboring countries. Uganda’s spending on the two major direct income support programs increased to about 0.14% of GDP in FY2017/18, while Kenya and Rwanda spent 0.4% and 0.3% of GDP, respectively. Overall expenditures on social

safety nets in Uganda are very low compared to other Sub-Saharan African countries (figure 14). Further, a large part of spending on SCG and NUSAF 3 is provided by donor grants or concessional loans. It is crucial for government to consider a risk financing mechanism to ensure medium- to long-term sustainability of the social protection sector. See annex A for more details on disaster risk finance (DRF) instruments used in Uganda.



FIGURE 14: SOCIAL PROTECTION EXPENDITURE IN SELECT AFRICAN COUNTRIES (MOST RECENT YEAR)



Source: World Bank 2020b.

**Although national and regional coverage of direct income support programs is low, coverage of NUSAF 3 reached reasonable levels within the specific districts in which it operated.** Whereas SCG beneficiaries are in poor and non-poor districts, beneficiaries of NUSAF 3 are, by design, mostly in Uganda’s poorer northern and northeastern districts. At close of the project, NUSAF 3 covered a total of 1,915,050 Labor-Intensive Public Works (LIPW) beneficiaries and 223,565 beneficiaries from households with those unable to work, such as the elderly, disabled, chronically ill, pregnant or lactating mothers, orphans, and female-headed households across the 67 districts (World Bank, 2021).

**Prioritizing expansion of the shock-responsive social protection system to areas with the highest levels of vulnerability and risk is critical.** As defined by the World Bank, shock-responsive or “adaptive” social protection “helps to build the resilience of poor and vulnerable households by investing in their capacity to prepare for, cope with, and adapt to shocks: protecting their

wellbeing and ensuring that they do not fall into poverty or become trapped in poverty because of the impacts of shocks” (Bowen et al. 2020). In Uganda, the high frequency of shocks and their correlation with poverty is significant. Hence, disaster risk reduction (DRR) interventions and targeted support to the poor and most vulnerable through shock-responsive safety nets have the potential to reduce the impact of disasters and the incidence of poverty.

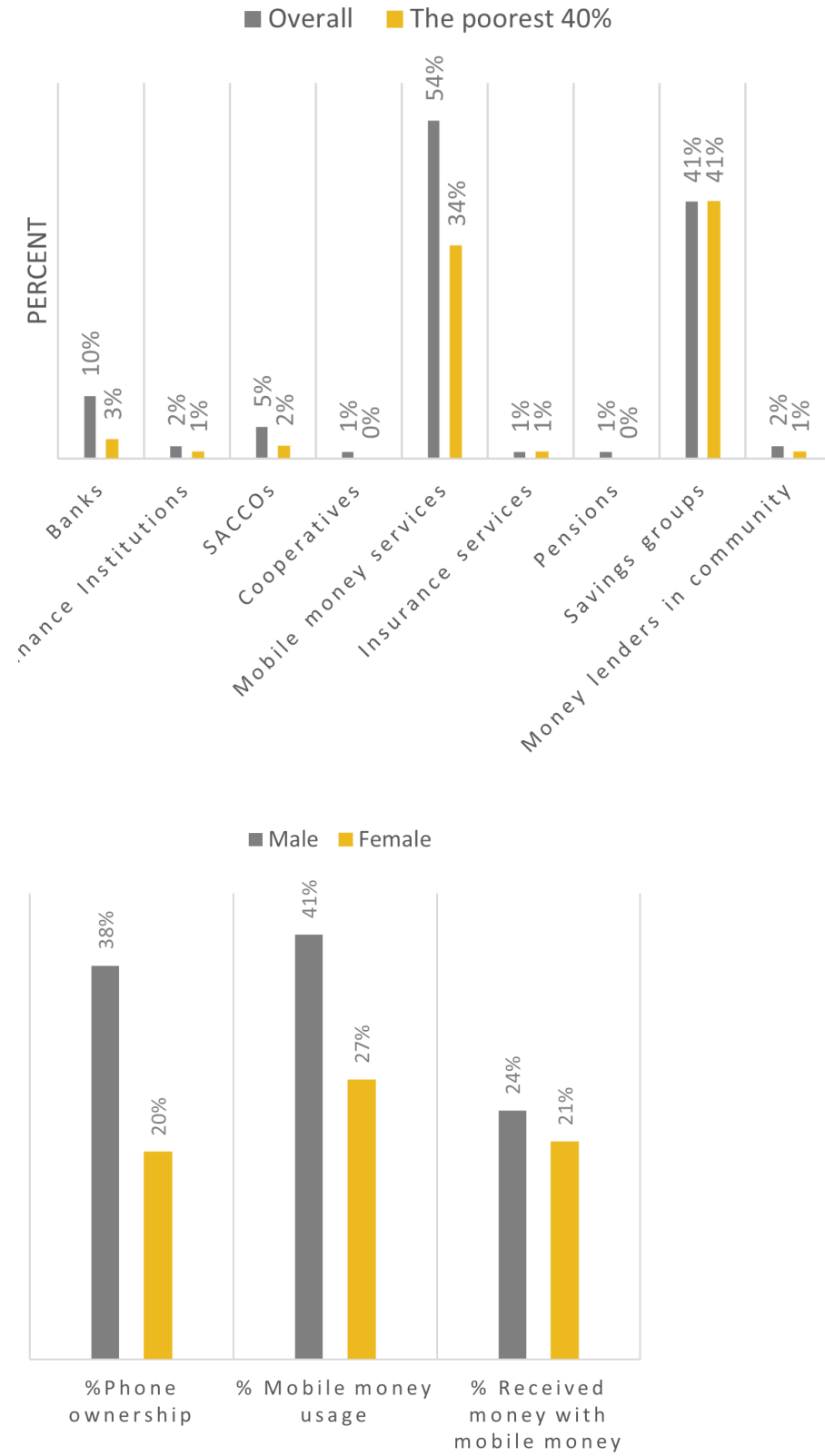
#### 2.4. Financial inclusion for protection and resilience

**Financial inclusion has proven effective in enabling households and communities to build assets and cope with shocks, but achieving inclusion remains a challenge in Uganda, especially for the poor.** In Uganda, 22% of adults are financially excluded, and only 58% of people financially included use formal financial services. Most of those in poverty have limited access to financial service providers and are also particularly vulnerable to shocks. Mobile money is the main driver of financial inclusion of the poorest 40% (FSD

Uganda 2018a); see figure 15. Limited financial literacy (awareness and understanding), costs, and distance from an access point are among the most

prevalent constraints preventing individuals from accessing formal financial services.

FIGURE 15: FINANCIAL INCLUSION IN UGANDA (LEFT) AND MOBILE MONEY USAGE BY UGANDA'S POOREST 40% (RIGHT)



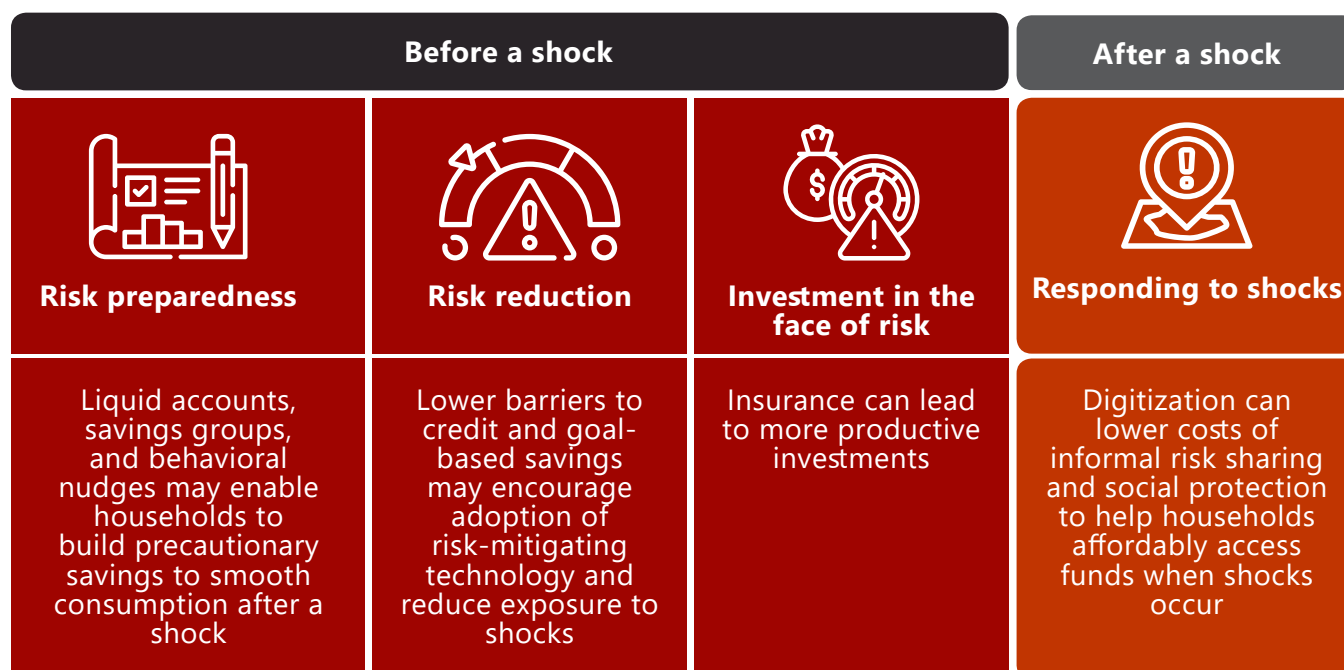
Source: FSD Uganda 2018a.



**Improving financial inclusion and facilitating access to financial services (savings, payment, credit, and insurance) could strengthen poor and vulnerable households' resilience to shocks.** Risk management solutions (formal and informal) contribute to building resilience and the ability to mitigate, cope with, and recover from shocks and stresses without compromising future welfare. Evidence suggests well-designed

financial products and services can play a role in increasing low-income families' resilience by helping them be prepared for risk, reduce risk, increase investment in the face of risk, and respond when a shock occurs (figure 16). In Uganda, savings groups/Village Savings and Loan Associations are the main saving method used by the poorest 40% of the population.

FIGURE 16: EMERGING EVIDENCE ON BUILDING RESILIENCE THROUGH FINANCIAL INCLUSION



Source: Moore Danielle, Niazi Zahra, Rouse Rebecca, and Kramer Berber. 2019.

## 2.5. Key messages

- The growth level in Uganda is not adequate to meet the country's objective of reaching lower-middle-income country status by 2030.
- Shocks like droughts and COVID-19 increase poverty levels (including in urban areas) and erode hard-won development gains.
- Beyond poverty, low human development indicators, gender inequalities, informality, and reliance on rainfed agriculture exacerbate vulnerability to shocks.
- Poor households often lack the means to cope with the shocks they experience. Given the rising impact of climate change and its threat

to development, it is important to prioritize a targeted social protection system that is shock-responsive and reduces the adverse impacts of shocks on poor and vulnerable households, including in urban areas.

- GoU is a global leader and innovator in the area of adaptive social protection, having successfully implemented an exemplary scalability mechanism under NUSAF 3 in Karamoja region.
- Financial inclusion remains a challenge in Uganda especially for the poor, yet it has proven effective in enabling households and communities to build assets and cope with shocks.

### 3. ASSESSMENT OF CURRENT APPROACH TO DISASTER RISK FINANCING

This chapter assesses Uganda's operational and financial preparedness for response to crises and disasters. Operational preparedness considers the adequacy of the policy and institutional framework. Financial preparedness considers the availability of prearranged financing and disbursement mechanisms. Uganda faces many types of risks (climate, social, health, etc.); this assessment covers all non-health-related perils with similar impact on the population (food security, livelihoods/productivity), economy (assets, capital formation, GDP growth), and public financial response. A specific COVID-19 case study is presented separately (chapter 6) due to the peculiar nature of health-related risks.

#### 3.1. Policy, planning, and institutional framework

Three sets of laws provide the foundation for the legal and regulatory framework governing DRF: DRM, budgetary, and insurance laws. This section presents an overview of the DRF policy and institutional framework in Uganda.

##### 3.1.1. Disaster risk management legal and institutional framework

**The 1995 Constitution stipulates that the state has the obligation to establish an effective mechanism to deal with any disaster resulting from natural calamities or any situation causing a general displacement of people or a serious disruption of their normal life.** The Constitution assigns the president the power of declaring the state of emergency. It lays out a strong foundation enabling proper mainstreaming of DRM in the country's development plan and vision. Disasters are recognized as a major threat to the achievement of the country's development aspirations, which are outlined in the National

Development Plan-III (NDPIII) 2020 to 2025, Uganda Vision 2040, and the national targets set for the Sustainable Development Goals 2030 and the Sendai Framework for Disaster Risk Reduction 2015–2030.

**Several plans and strategies outlining the country's development aspirations call for an integration of DRM in all programs.**

Uganda Vision 2040 recognizes the importance of strengthening the country's resilience to the impacts of climate change. The NDPIII includes a dedicated program on climate change, natural resources, environment, and water management with a clear objective of reducing human and economic loss from natural hazards and disasters. The National Social Protection Policy (2015) also underscores the importance of social protection in addressing risks and vulnerabilities that expose individuals to income insecurity and social deprivation, leading in turn to undignified lives. More recently (September 2021) the country enacted a climate change law. This law governs all climate change interventions and provides for the establishment of a climate change fund as a special mechanism for climate change financing with some contribution from the government.

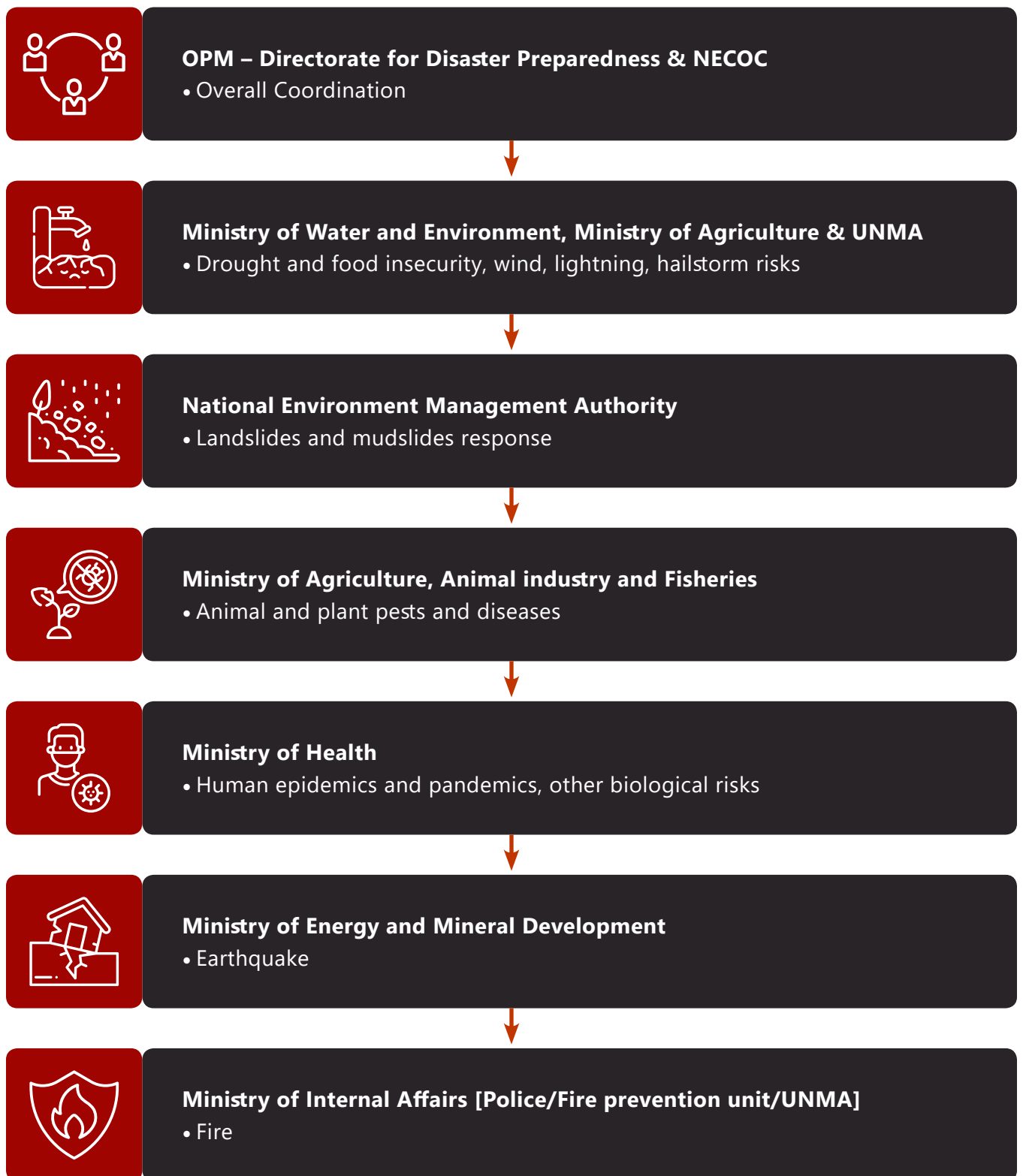
**However, the country still lacks a dedicated disaster risk management law.** Work has been in progress since 2016. The DRM bill aims to build on international best experiences, further strengthen the application of the existing policy, and provide clarity on key aspects that are missing or weakly addressed by the National Policy for Disaster Preparedness and Management (NPDPM) (Directorate of Relief, Disaster Preparedness and Refugees, OPM 2010). Among these aspects are the following: the declaration of the state of disaster; the disaster risk financing strategy and responsibilities of the Ministry of Finance, Planning and Economic Development (MoFPED); coordination of humanitarian assistance in the event of disasters; and training and research in DRM.

In the context of Uganda, it is important to provide the details differentiating a state of disaster from a state of emergency as indicated in the Constitution, and to clarify measures that will be put in place to prevent a natural disaster situation from becoming a crisis.

**Under the leadership of the Department of Relief, Disaster Preparedness and Management (DRDPM) of OPM, the NPDPM was adopted in 2011.** DRDPM is the agency responsible for DRR and for disaster preparedness, management, coordination, prevention, and response. NPDPM was revised in 2013 with the goal of reducing vulnerability, strengthening risk mitigation and disaster prevention and preparedness, and ensuring effective response and recovery in a manner that integrates DRM with development planning and process. This policy aims to save lives, livelihoods, and the country's resources. The NPDPM provides policy guidance for both natural disasters (drought, flood, thunderstorms, landslides, earthquakes, human and animal epidemics, pest and infection, pandemic) and man-made disasters (fire, accidents, terrorism, conflict, etc.). The policy also covers famine and food insecurity, which in the context of Uganda are primarily driven by drought. Under the NPDPM, DRDPM is entrusted with the administration of the disaster preparedness and management fund and the establishment of mechanisms and procedures to access the fund. The NPDPM also instructs the Ministerial Policy Committee (MPC) to set measures ensuring that sectoral ministries identify and allocate resources for disaster preparedness and management in their sector. However, the policy does not assign MoFPED and the National Planning Authority clear roles.

**The NPDPM assigns to the National Emergency Coordination and Operations Centre (NECOC) several coordination functions** (Figure 17): dealing with sudden-onset natural and human-induced emergencies, undertaking effective coordination, overseeing early warning, and ensuring preparedness of the various disaster response interventions. The NECOC works together with the National DRM Platform and reports to the DRDPM. However, NECOC is not established by an Act of Parliament and has no contingency budget of its own. Thus based on the current institutional arrangement, when a disaster occurs, the District Disaster Management Committees with support from sectoral ministries conduct needs assessment and response interventions, activate the District Emergency Coordination and Operations Centre, and alert the NECOC. The district local governments lack resources (technical capacities and financial resources) for disaster preparedness and mitigation and have limited linkage with NECOC. Under the NPDPM, however, when NECOC receives an alert the Inter-Agency Technical Committee is convened to organize and coordinate responses from both national institutions and development partners. The proposed response plan is then submitted for approval to the MPC, which is a standing Cabinet committee, and presented to the president, who is in charge of declaring a state of emergency. This process instructs the minister of finance to mobilize the various financial mechanisms of the country (supplementary budget, budgetary reallocations, contingency funds, deviation from objectives of the Charter for Fiscal Responsibility, etc.).

FIGURE 17: RESPONSIBILITIES OF MINISTRIES, DEPARTMENTS, AND AGENCIES IN RISK MANAGEMENT AND RESPONSE



Source: OPM and UNDP 2021.  
Note: UNMA = National Meteorological Agency.

**Under the NPDPM’s institutional framework, the MoFPED’s roles and responsibilities in responding to disaster risks are limited.** Jointly with OPM/DRDPM, the MoFPED is called upon to prepare a bill for the establishment of a dedicated National Disaster Preparedness and Management Fund to support disaster preparation and management. Such a fund is not yet operational. There is, however, a contingency fund in the national budget that can be used for natural disasters as well as other economic shocks—but the contingency fund is not dedicated solely to natural disasters, and the scope of disasters is not clearly defined. Thus the mobilization and allocation of resources are not risk-informed.

**The DRM bill is an opportunity to enact DRF provisions and provide clarity on the MoFPED’s roles and responsibilities.** Indeed, disasters impact individuals, households, businesses, and infrastructures, and hence the entire economy of the country. Given the responsibilities and roles of the MoFPED in developing economic, financial, fiscal, and budgetary policies, in planning public investments, and in coordinating public expenditures, it plays an essential role in ensuring financial resilience in disaster response and management (Box 1). Financial resilience is a critical component in any effective DRM strategy at any level of government.

**Box 1: Indicative roles and responsibilities of Ministry of Finance, Planning and Economic Development in disaster risk finance**

- Assess losses and economic damage arising from disasters to better reflect the impacts on public finance.
- Put in place adequate and effective response instruments, whether public or public-private to reduce financial vulnerabilities in the face of shocks.
- Ensure proper fiscal management of risks by anticipating potential budgetary impacts, and plan ahead to allow rapid release of funds.
- Establish clear rules for mobilizing and executing budgets and for procurement in emergency and disaster situations.
- Ensure the soundness and resilience of the financial sector to disaster risk, including through appropriate regulation, business continuity planning, and stress testing.
- Ensure optimal allocation of resources for disaster risk management, including assessment of the profitability of major public investments in disaster risk reduction.

### **3.1.2. Budgetary law**

**According to the country’s budgetary law, sectoral ministries in specific situations such as natural calamities can request a budget reallocation at their discretion within their appropriated budget lines; however, such processes need to be approved by the minister of finance, planning and economic development.** Shifting resources away from ongoing or planned projects could be a lengthy process and undermine development objectives established within the ministry.

**The Public Finance Management Act 2015, under the section on budget preparation, approval, and management, established the contingency funds. Sectoral ministries may request from MoFPED supplementary resources** to cover the cost of their sector’s response to a natural disaster.

**Under the Public Finance Management Regulation 2016, the minister of finance, planning and economic development has the power to approve a supplementary budget of up to 3% of the total approved budget for the financial year in case the supplementary expenditure is unabsorbable, unavoidable, and unforeseeable.**

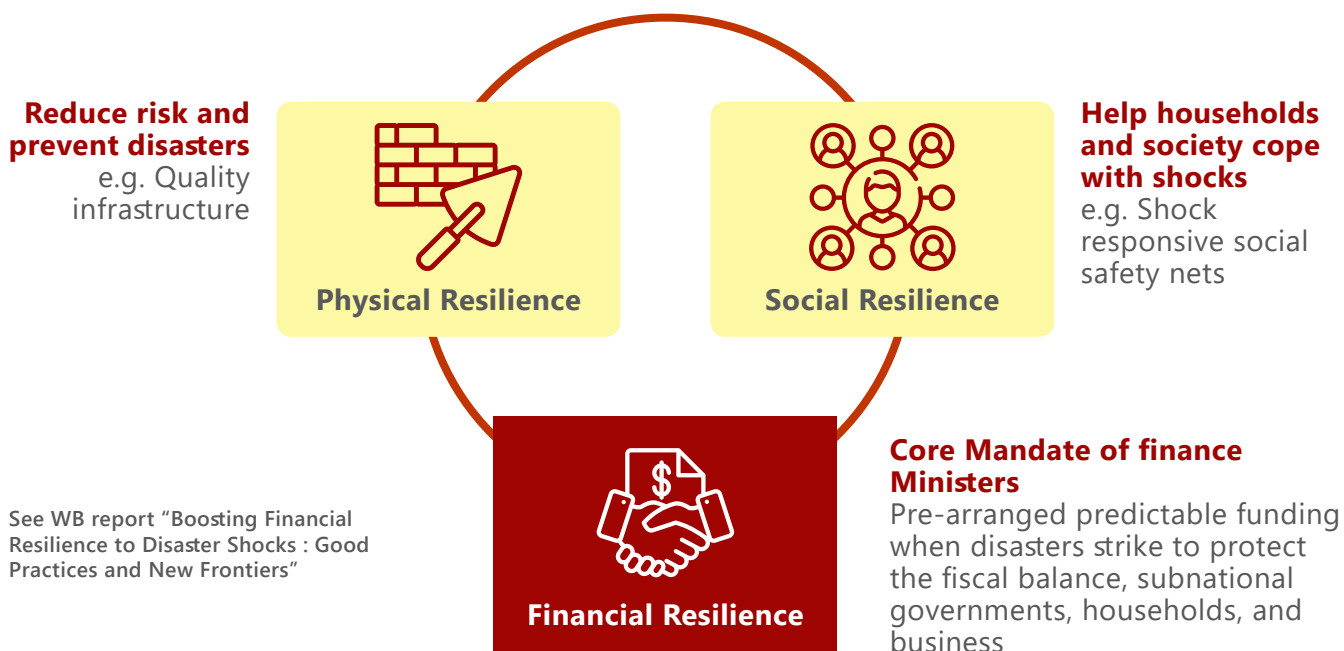
Estimates of amounts needed or already spent are presented to Parliament; for sums already spent this must be done within four months of the expenditure. Deviations from the objectives of the Charter for Fiscal Responsibility 2016 are permitted if a natural disaster, an unanticipated severe economic shock, or any other unforeseen event occurs that cannot be funded from the contingency fund or any other funding mechanisms provided in the Budget Appropriation Act or using prudent fiscal policy adjustment.

**Under the Public Finance Management Regulation 2016, the Budget Framework Paper required by each sector should include a fiscal risks statement (FRS) presenting the main financial resources available to tackle risks, such as loans, guarantees, and public-private partnership arrangements, along with an estimate of disasters’ fiscal impact and the strategy to manage disaster risks.** The Macroeconomic policy department of MoFPED is responsible for an FRS. As of now, the FRS does not consider shocks due to natural disasters and refugee inflows. However, as part of the process to prepare

the FRS, the Macroeconomic Policy Department of MoFPED consults OPM to inform its analysis.

**There is limited formal coordination between OPM and other government entities responsible for financial planning and assessment of contingent liabilities and fiscal risk arising from disasters.** While the macroeconomic policy department unit consults and engages with OPM during the fiscal risk assessment process, there is no formal framework to coordinate the two. In addition, the analytical results of the FRS do not inform the level of funding by the OPM for the contingency reserve or the budget for disaster response and management. Moreover, resource constraints result in underinvestment in the prevention strategies proposed as part of the FRS, which focus on building physical resilience to disaster (e.g., investment in resilient infrastructure, drought-resistant seeds, etc.). Uganda’s risk profile and experience of disaster impacts call for a holistic approach to building disaster resilience, including physical resilience, social resilience, and financial resilience (figure 18).

FIGURE 18: BUILDING A COMPREHENSIVE APPROACH TO RESILIENCE



Source: World Bank Group 2019.

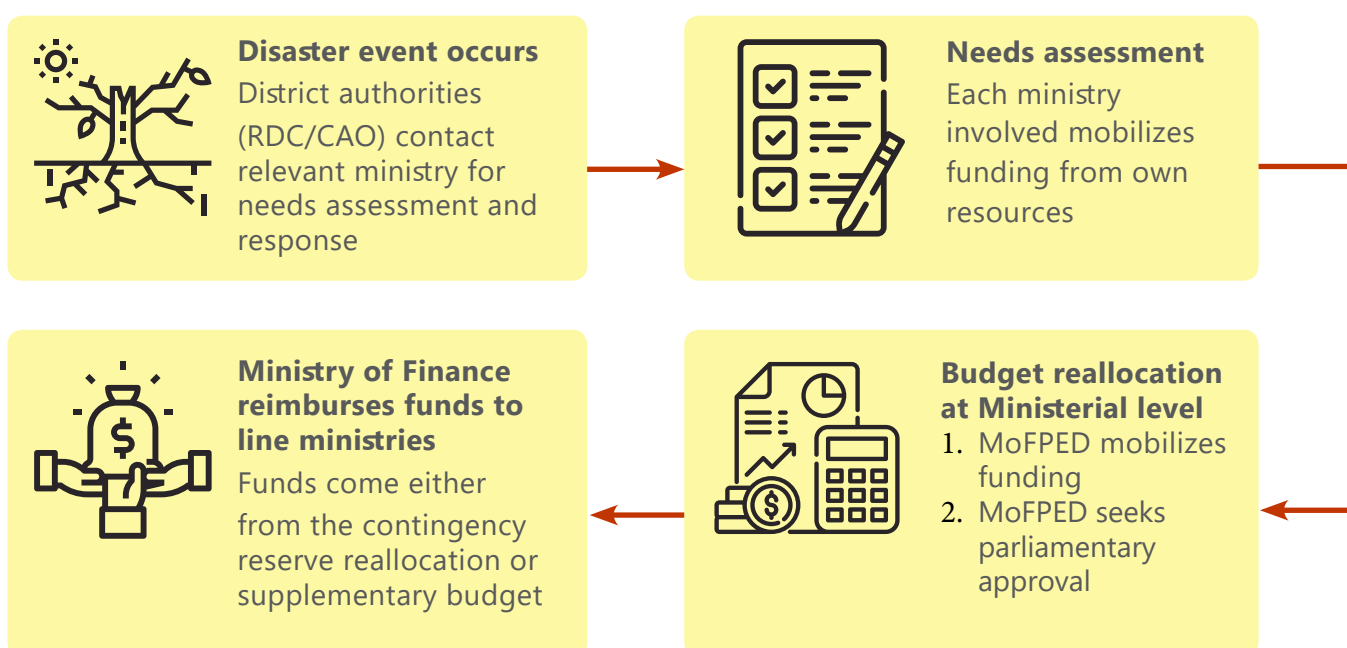
### 3.1.3. Process of mobilizing funds

**The district-level authorities are the primary responders in the event of a natural disaster.**

Figure 19 shows the process by which local governments request financial assistance from the national government. This process may take more than a month. Meanwhile existing grants at local government level cannot be used for disaster response. GoU could consider approving use of funds in existing conditional grant frameworks by local government for disaster and crisis response.

Such an appropriation could be conditionally tied to financing specific activities that enhance resilience in the long term. To ensure equity and inclusiveness, the conditional grant amount could incorporate a risk parameter in the grant allocation formulas. This risk-based approach would ensure that districts affected by disasters are the main beneficiaries of financing considering limited resources, and that the amount allocated is commensurate with the degree of exposure and vulnerability.

Figure 19: Process of mobilizing funds from local government level



Source: World Bank analysis.

Note: CAO = Chief Administrative Officer; MoFPED = Ministry of Finance, Planning and Economic Development; RDC = Resident District Commissioner

### 3.1.4. Insurance law

The section below focuses on the legal framework governing the insurance sector in Uganda, the third foundation (after DRM and budgetary laws) for strengthening DRF. The state of the insurance market and availability of disaster-related insurance products will be discussed in chapter 4.

**Insurance companies in Uganda operate under the terms and conditions of the Insurance Act 2017 (Act 6 of 2017), which was brought into force on March 30, 2018.** This new act replaces the Insurance Act 2000. The Insurance Regulations 2002, published under the terms of the Insurance Act (Cap 213) Laws of Uganda 2000, will remain in

force with all other regulations (Axco 2018) until draft regulations under the Insurance Act 2017 are issued.

**The insurance market is supervised and regulated by the Insurance Regulatory Authority (IRA).** Under the Insurance (Amendment) Act of September 2011, the Uganda Insurance Commission was renamed the Insurance Regulatory Authority of Uganda. An autonomous agency under MoFPED, the IRA is tasked with licensing of insurance companies, reinsurance companies, health membership organization companies and their intermediaries, loss adjusters and assessors, risk inspectors, and valuers.

Other functions include inspecting and reviewing companies operating in the insurance market, operating a complaints bureau, approving policy and proposal form texts, approving minimum premium and maximum commission rates, and advising the GoU on insurance protection and security of national assets and properties. The IRA is funded by 1.5% of insurers' gross written premiums (Axco 2018).

**By 2020, there had been significant progress in formulating regulations to bring the Insurance Act's provisions into effect, including approval and sign-off on the mobile insurance regulation, index contract regulation, and five other regulations.** The mobile insurance regulation will promote financial inclusion by ensuring ease of access to transparent digital transactions (using a mobile phone), including onboarding clients, paying premiums, making claims, and receiving claim settlements. In addition to making insurance more inclusive, such regulation will facilitate access for last-mile clients.

The index insurance contract regulations provide the criteria for developing and approving index insurance products. They also allow for insurance based on predetermined indexes for losses incurred i.e., losses resulting from weather (e.g., rainfall) and other catastrophic events—rather than on an assessment of the actual loss. Additionally, the Insurance Regulatory Sandbox Guidelines 2020, which came into force in 2020, establish an insurance regulatory framework for FinTech experimentation with innovative technology and products in order to improve efficiency and access to insurance services. The aim is to promote research, innovation, and insurance market development with innovative products without compromising policyholder protection. These new regulations and guidelines will contribute significantly to the implementation of large-scale initiatives reaching the bottom-of-pyramid clients. In Kenya, similar enabling regulations (mobile insurance, Index insurance contract regulations) have contributed to the development of innovative social protection programs targeting pastoralists.

**The work on microinsurance regulations will contribute to facilitating access of the poor and vulnerable to insurance solutions.** The microinsurance regulations are intended to provide a more robust regulatory framework, especially relevant to low-income earners. Stamp duty per policy, plus value added tax of 18% of the gross premium, is deterring many low-income earners from buying insurance. The new microinsurance regulation under preparation should consider these factors in light of Uganda's financial inclusion objectives and its national insurance policy framework, which aims at enabling all Ugandans to access affordable insurance for sustainable incomes and livelihoods. The national insurance policy is under review by the IRA Board.

### 3.1.5. Social risk policy

**Social risks faced in Uganda and elsewhere are multidimensional and often compound in ways that are poorly understood, making policy formulation difficult (Mahony, Albrecht, and Sensoy 2019). The GoU does not have a formal policy for social risk.** When the security sector budget allocation is increased, and investments in education, health, social development, and social protection are decreased, the impact of key stressors like human displacement, weak institutions, demographic pressures, and increasing climate-related natural disasters—is heightened (UN and World Bank 2018). The impact is further compounded by exogenous shocks such as the COVID-19 pandemic and inflation. Expenditure in the security sector increased more than in any other sector over the last two years,<sup>16</sup> narrowing fiscal space for social and capital investments. Significant declines in budget proportions for health, education, and social protection suggest persistent de-prioritization of social development. Declines in public service provision increase risk of grievance-related social unrest in the medium term (UN and World Bank 2018), rendering it more important to develop live social risk monitoring models that also identify real and perceived issues for the GoU to address.

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16. MoFPED, communication on budgetary allocation per sector, 2021.

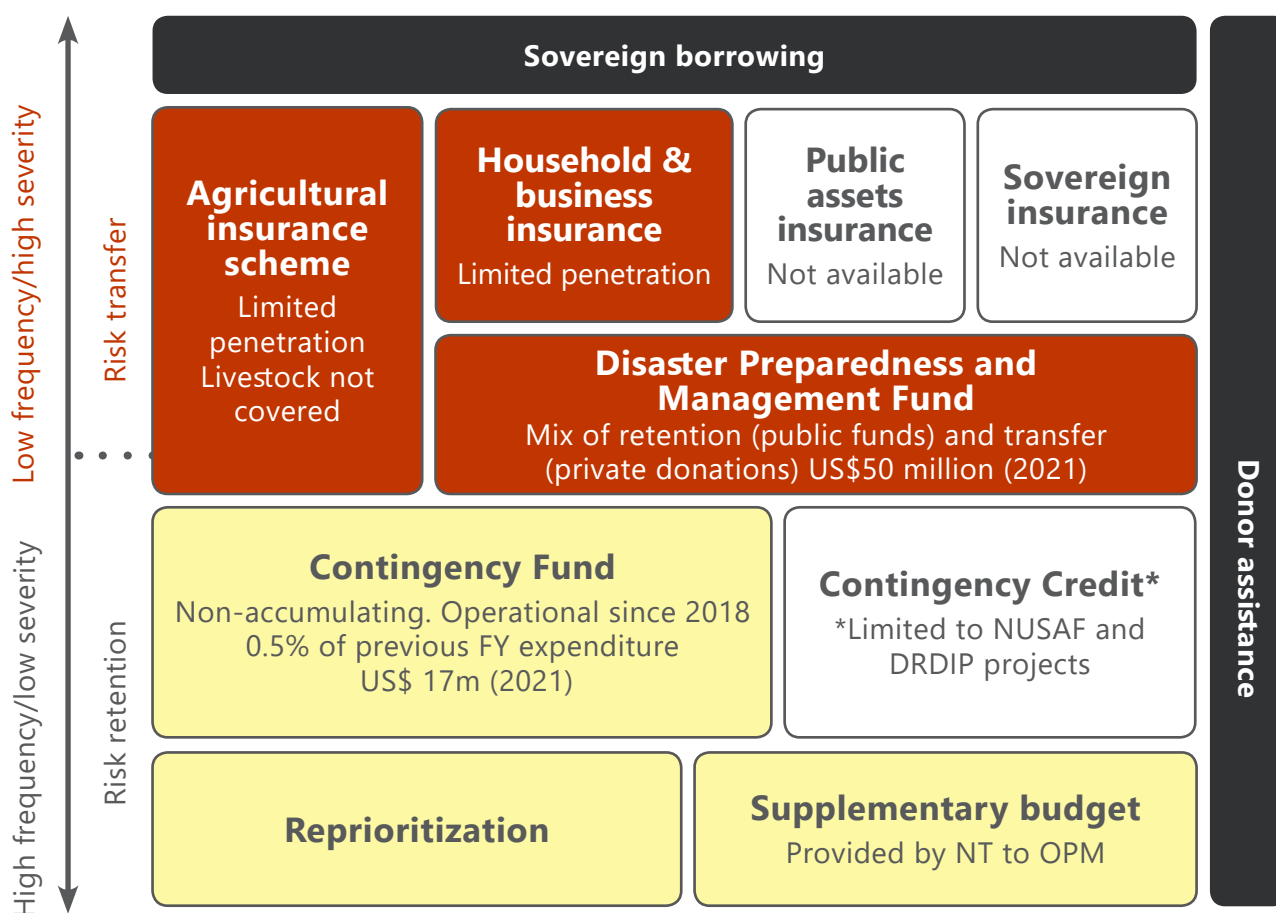


### 3.2. Existing risk finance for disaster response

GoU's approach to disaster financing includes a few prearranged instruments, with key retention instruments like contingent credit missing and a dedicated fund still under debate. The funding gap after large shocks is financed through ex post risk financing instruments and donor aid. The prearranged instruments include a contingency reserve that has been in operation since 2018 and is managed by National

Treasury, allocations for each line ministry, and supplementary budgets that require Cabinet approval. A national response fund was established in 2020 to raise additional funds from the private sector and other contributors in response to COVID-19. This fund is not underpinned by any legal framework and may not be a sustainable or reliable financing instrument for GoU. The status of various DRF instruments in Uganda is shown in figure 20 while Table 4 provides a comparison of the different instruments



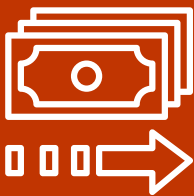
FIGURE 20: STATUS OF DISASTER RISK FINANCING INSTRUMENTS IN UGANDA





Source: World Bank analysis.

Note: DRDIP = Development Response to Displacement Impacts Project; NUSAF = Northern Uganda Social Action Fund; OPM = Office of the Prime Minister.

TABLE 4: COMPARISON OF DISASTER RISK FINANCING INSTRUMENTS

Type of Instrument	Advantages	Disadvantages	Best use
<b>Ex ante</b>			
 <p><b>Contingency / reserve funds</b></p>	<ul style="list-style-type: none"> <li>• Can be cheap, particularly for frequent shocks</li> <li>• Fast</li> <li>• Allows implementers to plan</li> <li>• Approach has been used in many contexts; thus experience is available for countries to build upon</li> </ul>	<ul style="list-style-type: none"> <li>• Requires fiscal discipline</li> <li>• High opportunity cost of funds, given high rates of return on other government investments</li> <li>• Can be hard to defend politically given opportunity cost</li> </ul>	<p>Low-risk layer-e.g., frequent low-level events such as annual flooding or localized drought or conflict</p>
 <p><b>Contingent credit</b></p>	<ul style="list-style-type: none"> <li>• Can be cheap, particularly for mid-frequency shocks</li> <li>• Fast when conditions for disbursement are met</li> <li>• Allows implementers to plan</li> <li>• Can incentivize proactive actions to reduce risk (e.g., policy actions in DRR and DRM)</li> </ul>	<ul style="list-style-type: none"> <li>• Has conditionality</li> <li>• Opportunity cost of loan</li> <li>• Adds to country's debt burden; must be repaid</li> <li>• Current low (but growing) uptake of Cat DDOs, as some countries prefer investment projects where resources are more guaranteed over contingent instruments</li> </ul>	<p>Mid-risk layer-e.g., higher-magnitude events that occur less frequently but cause damage that exhausts the resources of national contingencies, such as widespread flooding or hurricane</p>
 <p><b>Market-based risk transfer instruments</b></p>	<ul style="list-style-type: none"> <li>• Can be cheap, particularly for extreme shocks</li> <li>• Can be fast</li> <li>• Allows implementers to plan</li> <li>• Supports fiscal discipline</li> <li>• Promotes risk diversification</li> </ul>	<ul style="list-style-type: none"> <li>• Can be expensive for frequent shocks</li> <li>• Can be vulnerable to criticism and "regret"</li> <li>• Can miss need</li> <li>• Requires a level playing field to negotiate</li> <li>• Trade-off between the cost of premiums and the frequency or scale of payout</li> </ul>	<p>High-risk layer-e.g., extreme less-frequent events occurring less than every 5–10 years such as severe droughts, hurricanes, or earthquakes</p>

Type of Instrument	Advantages	Disadvantages	Best use
<b>Ex post</b>			
 <p><b>Humanitarian assistance</b></p>	<ul style="list-style-type: none"> <li>• Flexible – can respond to need</li> <li>• Doesn't have to be repaid</li> </ul>	<ul style="list-style-type: none"> <li>• Can be slow so the hazard impact increases</li> <li>• Can be unreliable</li> <li>• Undermines planning</li> </ul>	<ul style="list-style-type: none"> <li>• Can be slow so the hazard impact increases</li> <li>• Can be unreliable</li> <li>• Undermines planning. Only as a last resource</li> </ul>
 <p><b>Other ex-post instruments</b></p>	<ul style="list-style-type: none"> <li>• Approach has been used in many contexts; thus experience is available for countries to build upon</li> </ul>	<ul style="list-style-type: none"> <li>• Can be slow</li> <li>• Can have negative impact on long-term development / investment programs</li> <li>• Can be expensive</li> </ul>	Only as a last resource

Source: Calcutt, Maher, and Fitzgibbon 2021.  
Note: Cat DDO = Catastrophe Deferred Drawdown Option.

### 3.2.1. Ex post financing instruments

**Supplementary budget.** OPM currently relies on supplementary emergency releases from the Ministry of Finance, Planning and Economic Development, which are authorized by the Cabinet sitting during an emergency. This process is time-consuming and bureaucratic and does not provide timely and effective response. The amount released may be up to 10% of the contingency fund.

**Donor assistance.** GoU is heavily reliant on donor funding for emergency response and relief. Between 2007 and 2016, Uganda received a total of US\$39.3 million in disaster-related external funding. More than half (54%) of this was used for emergency response, and 41% was for disaster prevention and preparedness. The remaining 5% was put toward disaster-related reconstruction, relief, and rehabilitation (CSBAG 2018).

In the event of a large-scale emergency, the humanitarian community can launch a Flash

Appeal under the backing of the Humanitarian Coordinator/UN Resident Coordinator. The Flash Appeal is used to coordinate humanitarian response for the first three to six months of an emergency. Government ministries cannot appeal for funds directly through this facility but may be partners in UN or nongovernmental organization projects.

Alternatively, governments may consider accessing grants from the Central Emergency Response Fund (CERF), a humanitarian fund established to facilitate timelier and more reliable assistance to those affected by natural disasters and armed conflicts. The CERF is funded by voluntary contributions from UN member states, private businesses, foundations, and individuals. CERF is managed by UNOCHA (UN Office for the Coordination of Humanitarian Affairs) and allows the UN and the International Organization for Migration (IOM) to respond immediately to a disaster by making funding available for life-saving activities.

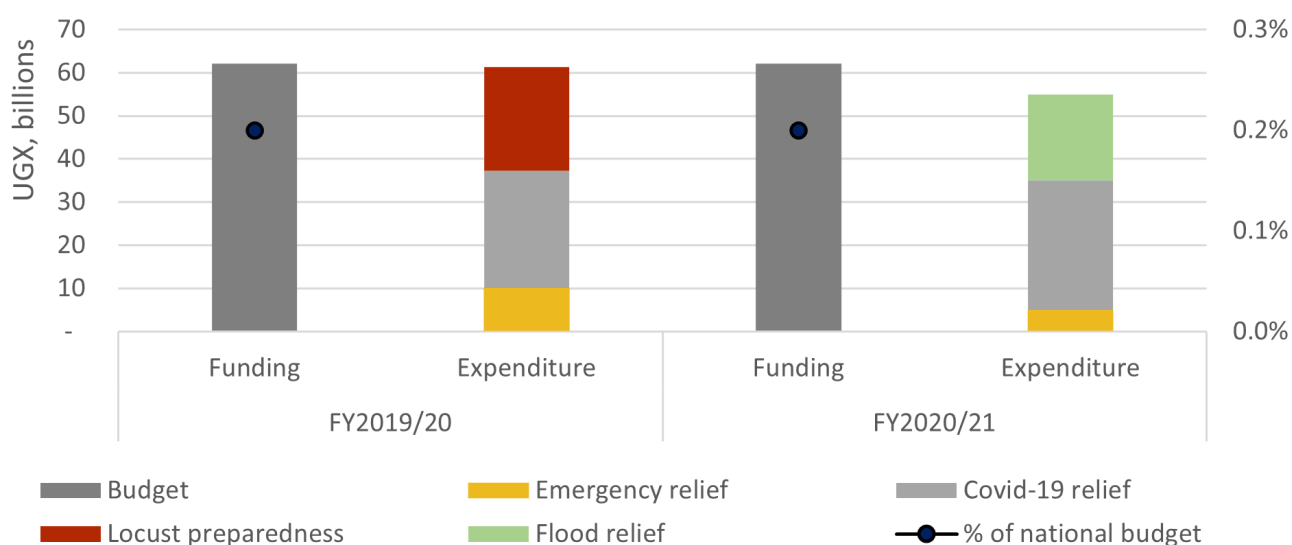
**Sovereign borrowing.** The minister of finance, planning and economic development may raise a loan by issuing government bills, bonds, or stock or by using any other method the minister may deem expedient, including a fluctuating overdraft. The terms and conditions require parliamentary approval.

### 3.2.3. Ex ante financing instruments

**Contingency fund.** The contingency fund is underfunded and lacks clarity on the scope of disasters it covers. The fund is legally provided for by Section 26 of the 2015 Public Finance Management Act, which provides for annual funding of 0.5% of the previous year’s total appropriated national budget.<sup>17</sup> However, since inception it has received less than 0.2%. The fund is administered by the MoFPED and can

be accessed by OPM as well as line ministries in charge of the response. Anecdotal evidence suggests that it takes on average a month for funds to be disbursed to the requesting institution. The fund was operationalized in 2018 but has been underfunded. The fund does not accrue, and any unexpended balance is repaid to the fund at the end of the financial year (July 31). When there is an advance from the contingency fund, the relevant Accounting Officer (vote counter) is required to account for the funds to the Accountant General and the Auditor General within 60 days of execution of activities or at the end of the financial year, whichever is earlier. As shown in figure 21, unexpended funds increased from 1% in FY2019/20 to 11% in FY2020/21, such that about UGX 7 billion was repaid back from the contingency fund to the general account.

FIGURE 21: PERFORMANCE OF CONTINGENCY FUND, FY2019/20–FY2020/21



Source: World Bank analysis based on interviews with MoFPED. 2021.

**National Disaster Preparedness and Management Fund.** The National Policy for Disaster Preparedness and Management, which came into effect in 2011, urges MoFPED to work with OPM to develop a National Disaster Preparedness and Management Fund Bill. The policy provides for a minimum annual allocation

to the fund of 1.5% of the annual approved budget. However, during the National Disaster Preparedness Forum<sup>18</sup>, MoFPED came out against setting up such a fund, arguing that Uganda operates a cash-based budget. The revised policy instead provides for the contingency fund to be used mainly for disaster response.

17. Prior to the 2015 Amendment, the Public Finance Management Act provided for an appropriation of 3.5% and required 15% of the contingency reserve to be ring-fenced for financial response to natural disasters; 85% was earmarked for supplementary expenditure.

18. Convened by OPM on 17 November 2021 at Munyoro resort and attended by officials from line ministries involved in disaster response –shown in figure 17 - as well as local government and the National Planning Authority and the National Meteorological Authority.

In clear demonstration of a gap in the current approach, a presidential directive in July 2021 tasked OPM with developing a National Disaster Risk Management plan and approved a US\$50 million budget for priority fundable actions. The fund is not anchored in any law and may be unsustainable due to its ad hoc nature. GoU may consider providing a legal underpinning for this fund through the DRM bill. It could be established as a facility to mobilize resources from state and non-state actors—an approach that would ensure more predictable and timely financing for response.

**Central storage facility for emergency relief items.** The facility faces challenges in maintaining an adequate stock of emergency food relief items in the stores. This has resulted in delays in response and to deterioration in the living conditions of victims already living below the poverty line.<sup>19</sup> An audit over the four financial years from 2005 to 2008 revealed that the facility took 49 days on average to respond to disasters, which is longer than the international benchmark of two days (AG, 2009). Recent statistics on the average response time are not available. However, GoU is considering decentralizing the storage facility to increase timeliness of distribution and better manage stock levels.

**Contingent credit.** GoU does not have a contingent line of credit in place for disaster response. However, prior to the emergence of the COVID-19 pandemic, GoU was considering use of this instrument.

**Risk transfer.** GoU has few risk transfer instruments at its disposal. The Uganda Agriculture Insurance Scheme (UAIS) is the main risk transfer instrument currently in place. GoU

currently does not have public asset insurance and does not use any sovereign insurance to finance natural disaster response. Uganda may access the African Risk Capacity (ARC), which also enables humanitarian and civil society organizations to obtain disaster risk funding through ARC Replica.

GoU has made slow progress toward establishing public asset insurance. GoU remains exposed to contingent liability from damage to public assets and disruption of critical services. In 2019, the government developed Asset Management Framework and Guidelines, which determine the types of assets to be insured and the conditions for insuring them. The IRA was charged with piloting a public asset insurance program and is in the process of identifying strategic public assets for the first phase. The process has been slow due to lack of technical capacity. To facilitate the process, GoU could develop specific guidelines for public asset insurance, including terms and conditions for insurance in which the GoU has insurable interest. GoU could also develop standard insurance bidding contracts and documents for brokers and insurers. Lastly, there is a need to strengthen the national asset register.

**Uganda Agriculture Insurance Scheme.** Agriculture insurance is provided through the UAIS, a public-private partnership that was established in 2016 to mitigate financial losses suffered by farmers due to natural disasters and other causes and to attract agricultural finance.<sup>20</sup>

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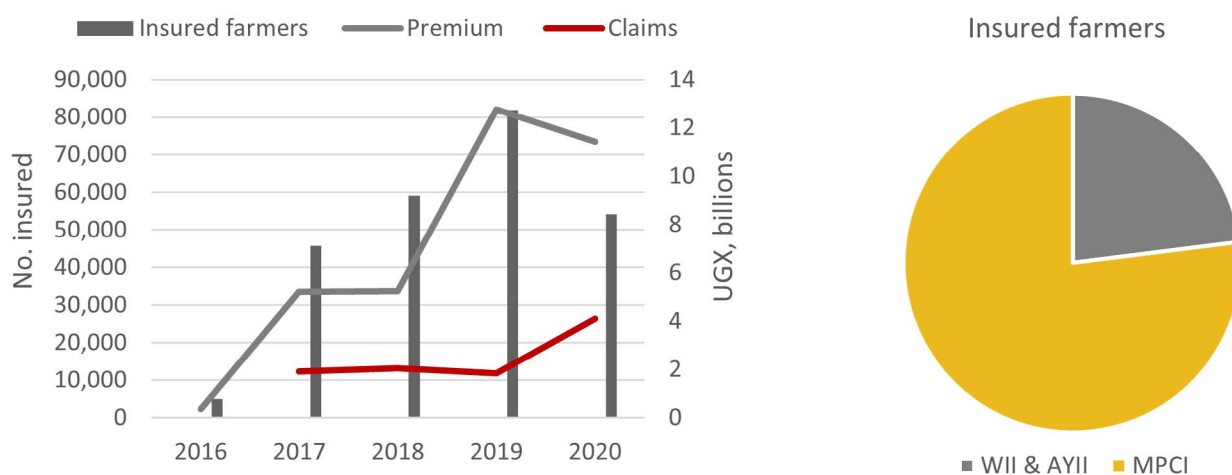
19. UBOS 2009; cited in Office of the Auditor General, "Annual Report of the Auditor General for the Year Ended 30 June 2009—Volume 5: Value for Money Audit."

20. Perils covered include drought, earthquake, excessive rainfall, flood, fire, hailstorm, landslide, lightning, malicious damage, uncontrollable diseases, uncontrollable pests, and windstorm.

The scheme is underwritten by the Agro Consortium, a coalition of 12 insurance companies, and is administered by the Uganda Insurers Association. The scheme operates nationwide and provides cover for strategic crops, livestock, and fisheries in the form of Multi-Peril Crop Insurance (MPCI) and livestock insurance, Area Yield Index Insurance (AYII), and Weather Index Insurance.<sup>21</sup> Government provides UGX 5 billion every year, which is used to finance premium subsidies of 30%, 50%, and 80% respectively for large-scale farmers, small-scale farmers, and farmers in disaster-prone areas. Premium rates before subsidies ranged between 6% and 7% but are now set at 5% after the government subsidy.<sup>22</sup> To further improve affordability, agricultural insurance policies are not taxed. Discussions are underway to encourage embedding of insurance in the Agricultural Credit Facility, currently under the management of Bank of Uganda (MoFPED 2021).

**Uptake of insurance has been strong; between inception in 2016 and December 2020, the UAIS cumulatively protected nearly 250,000 farmers with about UGX 1.5 trillion in insurance cover** (Figure 22). UAIS has written premiums of over UGX 37.6 billion and paid total claims of over UGX 9.4 billion. Insured farmers increased from 5,000 in 2016 to 82,000 in 2019 but decreased in 2020 mainly due to the COVID-19-induced economic slowdown. Most claims emanate from drought (72%) and animal mortality (13%). Uptake could be further enhanced through targeted insurance awareness programs to address demand-side barriers (related to low trust in insurance providers and limited understanding of how insurance works). Supply-side constraints like high distribution and operational costs could be addressed by leveraging FinTech and strengthening local technical skills on loss adjusting and crop cutting experiments.

FIGURE 22: PERFORMANCE OF UAIS, 2016–20



Source: World Bank Analysis based on data from Uganda Insurance Regulatory Authority.

Note: AYII = Agriculture Yield Index Insurance; MPCI = Multi-Peril Crop Insurance; WII = Weather Index Insurance.

21. These products cover only crops and livestock specified under the Agricultural Sector Strategic Plan 2015/16–FY2019/20 and the Uganda National Development Plan III, including coffee, tea, maize, rice, cassava, beans, fruits and vegetables, cattle, pigs, poultry, and fish, in addition to the four strategic commodities, namely, cotton, palm oil, oil seed, and cocoa.

22. Data from IRA, 2017.

**Although UAIS is reaching smallholder farmers, most premium subsidies are being captured by medium and large producers, as MPCI is unsuitable for smallholder farmers (figure 22).**

The average premium on AYII policies ranges between US\$3 and US\$5, while the average MPCI premiums are US\$48—hence unaffordable for most smallholder farmers. Overall, 90% of the premium written is on MPCI. MPCI is most appropriate for mono-culture farms, and not for the mixed cropping adopted by smallholders. In addition, MPCI design requires 7–10 years of historical crop yield data, which do not exist at the smallholder level.

**UAIS could scale up two insurance products targeting smallholder farmers and herders where the support is not currently reaching:**

namely AYII for crop farmers and a Satellite-Based Pasture Drought Index Insurance (SPDII) for pastoralists in rangeland areas (the cattle corridor), which are not currently served by the UAIS. In addition, the scheme could explore FinTech solutions to address distribution challenges as well as use of agricultural extension services, bundling of AYII with the e-voucher scheme for inputs under the Agriculture Cluster Development Project, and provision of smart premium subsidies linked to inputs.

**The scheme's use of community rating rather than risk-based pricing could undermine financial sustainability.** UAIS charges a single premium rate for all crop types irrespective of the risk exposure. Under a risk-based pricing framework, crops that pose a higher risk cost more to insure. This approach would incentivize farmers to grow crops more appropriate for their location by identifying the most or least risky crops. By contrast, under the flat premium rates,

farmers growing higher-risk crops are more likely to purchase insurance, which they would see as good value, while farmers growing lower-risk crops tend to see the insurance as expensive and decline to purchase it. Overall, the community rating framework creates incentives that could lead to significant anti-selection, which could threaten the sustainability of the scheme. The scheme could transition to a risk-based pricing framework to ensure long term sustainability.

**The UAIS could be strengthened and GoU could make strategic investments to develop key public goods like agro-meteorological data.**

The following types of data are critical for designing and pricing agricultural insurance: (i) time series crop area, production, and yield data at individual-farmer level and local (village, parish) level; and (ii) time series meteorological weather station data. Crop production data collection was formerly conducted by the National Agricultural Advisory Services–Ministry of Agriculture, Animal Industry and Fisheries (NAADS-MAAIF), but this system broke down many years ago. The Uganda Bureau of Statistics collects some agricultural data through the agriculture and livestock censuses; however, these are conducted only every 10 (or more) years; the last agriculture census was conducted in 2008/09. The results of a national livestock census that was conducted in May 2021 are yet to be released. The National Meteorological Agency (UNMA) is responsible for recording and reporting weather data; however, its network of 39 weather stations is inadequate to support the development of Weather Index Insurance. Furthermore, some of the stations are not operational due to lack of staffing, inadequate maintenance, or vandalism. There is need for public investment to strengthen the network of ground weather stations.

### 3.3. Disbursement mechanisms for disaster response

#### 3.3.3. Shock-responsive social protection

**GoU piloted shock-responsive social protection by incorporating a DRF mechanism to scale up protection in response to disaster shocks in Karamoja between 2016 and 2019 (under NUSAF 3).** The DRF mechanism enabled LIPW programs to expand temporarily and automatically to assist poor and vulnerable households immediately following crises or shocks, primarily climatic shocks that exacerbate food insecurity, such as drought. Once a predefined trigger was reached, LIPW activities were scaled up and coverage was extended to additional beneficiary households.

**The DRF mechanism performed well in building households' resilience to disasters.** Since the inception of the project, scale-up of LIPW activities was triggered in 2017, 2018, 2019, and

2020 and provided support to a total of 90,405 beneficiaries, equal to 108% of the target number of beneficiaries. According to World Bank (2020b), an evaluation study conducted in October 2018 found that 98% of beneficiaries were satisfied with the DRF modality. Furthermore, the study noted that the mechanism enabled households to acquire food reserves to cushion against and mitigate the effects of droughts. In this way, the mechanism allowed the government to save on emergency food aid that would have been needed in the absence of the scalable disaster response under the project. The study estimated that the government realized savings of UGX 9.6 billion relative to an emergency fund of UGX 19 billion in FY16/17 (World Bank 2020b). The total disbursement to support the four scale-ups was about US\$10.06 million. A majority (81.4%) of the respondents surveyed in assessment of the project reported turning to the LIPWs as a coping mechanism for the drought. The progress made under the three NUSAF 3 resilience pillars is shown in figure 23.

FIGURE 23: PERFORMANCE OF NUSAF 3 DRF MECHANISM AS OF NOVEMBER 2021

Improved development indicators measured in terms of food consumption	Access to basic services through creation of community assets	Adaptive capacity of households
One meal consumption per day fell from 23% to 10%	Total of 3460 assets created	Increase in asset ownership: 45.6% for livestock, 16% for equipment
Two meals per day increased from 53% to 61%	Improved access to markets: decrease in distance by 14% for goods and 11% for livestock	Crop production increased: 2.9 kg to 66.1 kg per season for maize and 3.2 kg to 76.5 kg for sorghum
Three meal per day increased from 8% to 23%	22% of projects focused on agricultural activities	Decrease in negative coping: seeking food from relatives dropped from 55.8% to 28.8% of HHs
Increased dietary diversity and meal variety observed		Monthly income increased by 223%
		Less dependence on subsistence agriculture, HHs in business enterprises increase by 29%

Source: MUBS (2021), World Bank (2021).

Note: HHs = households; VSLAs = Village Savings and Loan Associations.



### 3.3.4. The Displacement Crisis Response Mechanism

**Uganda is implementing the world's first risk financing approach to human displacement.**

As part of a US\$200 million financing for the Development Response to Displacement Impacts Project (DRDIP), the Displacement Crisis Response Mechanism (DCRM) has been developed. The urgent nature of the refugee-related crisis demands that World Bank-supported GoU activities are front loaded and focused on host areas of increased need (World Bank 2017, 8). Scarce services, particularly in education, health, and water, demand a large share of DRDIP's available resources. The DCRM aims to develop and finance a mechanism to support rapid government scale-up of assistance to poor and vulnerable host communities in response to a refugee-related displacement shock. The response is directed through development activities related to community infrastructure and aims to build host and refugee community resilience by augmenting basic service delivery and sustaining human capital.

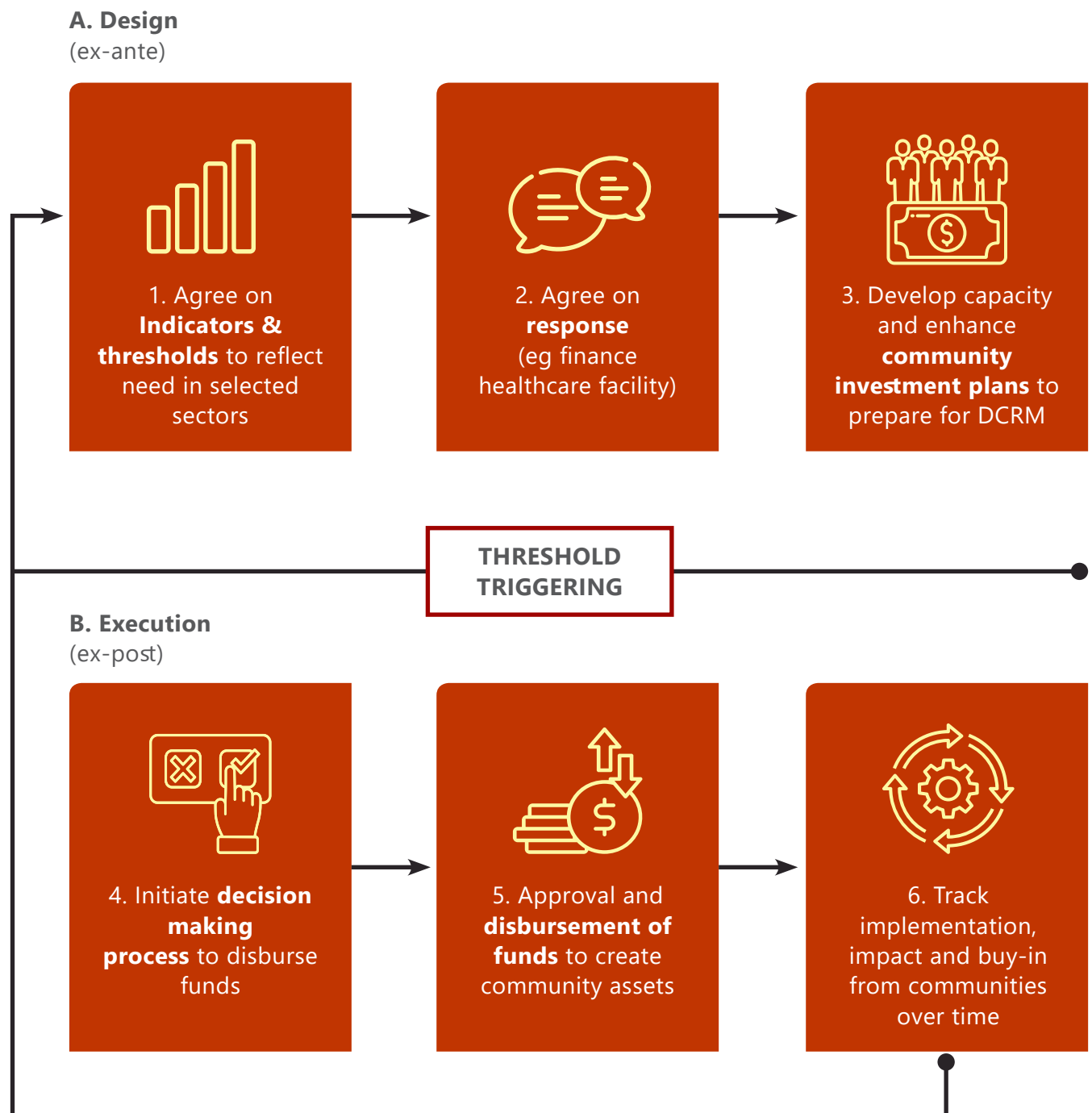
**To enable rapid response, the DCRM must have an accessible, accurate, transparent, rules-based, and accountable (objective) decision-making process for disbursing resources.** The unprecedented mechanism, which will be owned and led by GoU, enables rapid government response to a displacement shock using its own systems based on (and triggered by) objective, accurate, accessible, independent, and transparent data

(see Figure 24). The principles underpinning the DCRM's design draw on the emerging evidence (from safety net beneficiaries) for developing shock-responsive mechanisms that target poor and vulnerable households. The enabling principles include (i) objectivity (independent, manipulation-free, regularly collected, and representative data as the basis for triggering); (ii) accountability (clear rule-bound, time-bound, rapid, transparent, and accountable decision-making at each disbursement stage); (iii) pre-financed (dedicated, rapidly mobilized resources); and (iv) development-driven (community-driven activities implemented in line with community development plans and not humanitarian response).

**A pragmatic, iterative, and sector-specific approach to the identification of metrics for triggering was adopted,** given the following factors: (i) the complexity of refugee and host community vulnerability; (ii) an indicator range without development community consensus on the "best" indicators, including for both host and refugee communities; (iii) DCRM's innovative nature; and (iv) the importance of perception monitoring and a community-driven approach, including continuous stakeholder engagement in managing implementation risks. One indicator for health care, education, and water has been agreed with GoU, enabling monitoring and evaluation of metric representativeness, accuracy, objectivity, accountability, and accessibility.



FIGURE 24: THE DISPLACEMENT CRISIS RESPONSE MECHANISM PROCESS



Source: Chris Mahony, Barry Maher, and Simeon Abel, "Participation, pragmatism, and daring to invent: Uganda's Displacement Crisis Response Mechanism", World Bank Blog, June 2022.

**Collected data representing change in number of persons per health center, persons per functioning water point, and school-age children per classroom inform thresholds that trigger disbursement to scale up service capacity.** The data collection also builds on

ongoing data strengthening and oversight undertaken by the GoU and UNHCR (UNHCR 2018a).. While the mechanism is disbursing in two districts, consideration is now being given to its application in other refugee-hosting districts.

### 3.4. Key messages

- Uganda lacks a dedicated disaster risk management law. The DRM law is the overarching framework that will embody and effectuate existing DRM policy/strategy and future strategies such as DRF.
- There is a need to differentiate a state of disaster from a state of emergency and to clarify measures to prevent a natural disaster situation from becoming a crisis.
- The DRM bill is an opportunity to include provisions on DRF and clarity on the roles and responsibilities of the Ministry of Finance, Planning and Economic Development, given the financial and economic impacts of disasters on people, enterprises, the economy, and public finance.
- The existing available contingency fund is not dedicated solely to natural disasters, and the mobilization and allocation of resources are not determined based on the losses and damage arising from disasters.
- GoU could consider approving use of funds in existing conditional grant frameworks by local government for disaster and crisis response. Such an appropriation can be conditionally tied to financing specific activities that enhance resilience in the long term.
- DRF in Uganda is mainly ex post through supplementary budget and reallocation, which shift resources away from planned projects, can be time-consuming, and undermine development objectives.
- Developing more inclusive risk transfer solutions is important. However, the microinsurance regulations are still pending. Such regulations are intended to provide a more robust regulatory framework, which will be especially relevant for low-income earners.
- Where support is not currently reaching, UAIS could scale up to include products targeting smallholder farmers and herders, and could consider a revision of the premium subsidy scheme to ensure that government support reaches those who need it the most.
- The DRF mechanism piloted to scale up protection in response to disaster shocks in Karamoja between 2016 and 2019 leveraged NUSAF 3 and performed well in building households' resilience to disasters. It allowed the government to save on emergency food aid that would have been needed in the absence of the scalable disaster response—UGX 9.6 billion against an overall emergency fund of UGX 19 billion in FY2016/17 (World Bank 2020b).
- Uganda is implementing the world's first risk financing approach to human displacement, the Displacement Crisis Response Mechanism.

## 4. DOMESTIC INSURANCE MARKET REVIEW

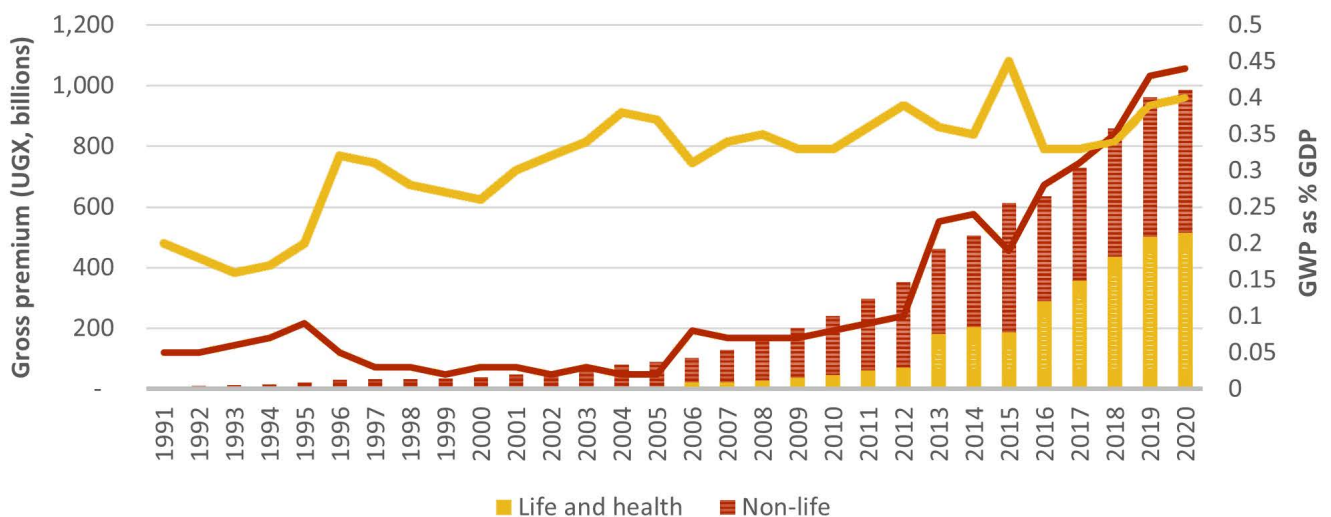
This chapter reviews the state of the domestic insurance industry and the relevant legal and regulatory environment governing the sector. It assesses the extent to which households, farmers, firms, and small and medium enterprises (SMEs) transfer disaster-related risk to insurance markets through property insurance, agricultural insurance, microinsurance, and health insurance. By absorbing risk faced by households and businesses, insurance can be an effective mechanism to reduce government contingent liability for natural disasters.

### 4.1. Insurance penetration

**The insurance sector in Uganda is relatively small, with a total gross written premium of US\$267 million (or 0.84% of GDP) in 2020.**

Total premiums written have grown rapidly since 1991 but have yet to reach a meaningful penetration rate (figure 25). Growth is largely driven by the life segment, which has grown at an average of 30% a year, and in turn driven by credit life insurance, which is embedded into loans by microfinance institutions and Savings and Credit Cooperative Organization (SACCOs). Consequently, penetration of the life segment has risen tenfold, to nearly 0.45%, and continues a strong upward trend. Meanwhile, the non-life segment has grown at an average of 18% over the period. Penetration is increasing slowly and has not recovered to its all-time high of 0.45% in 2016. Overall, the insurance industry is constrained by low rates of formal employment. About 80% of the employable population earns a living in the informal and agriculture sectors. Micro-insurers are making efforts to reach this market segment. However, their success rate remains low.

FIGURE 25: TREND IN WRITTEN PREMIUM AND INSURANCE PENETRATION, 1991–2020



Source: Axco 2021.

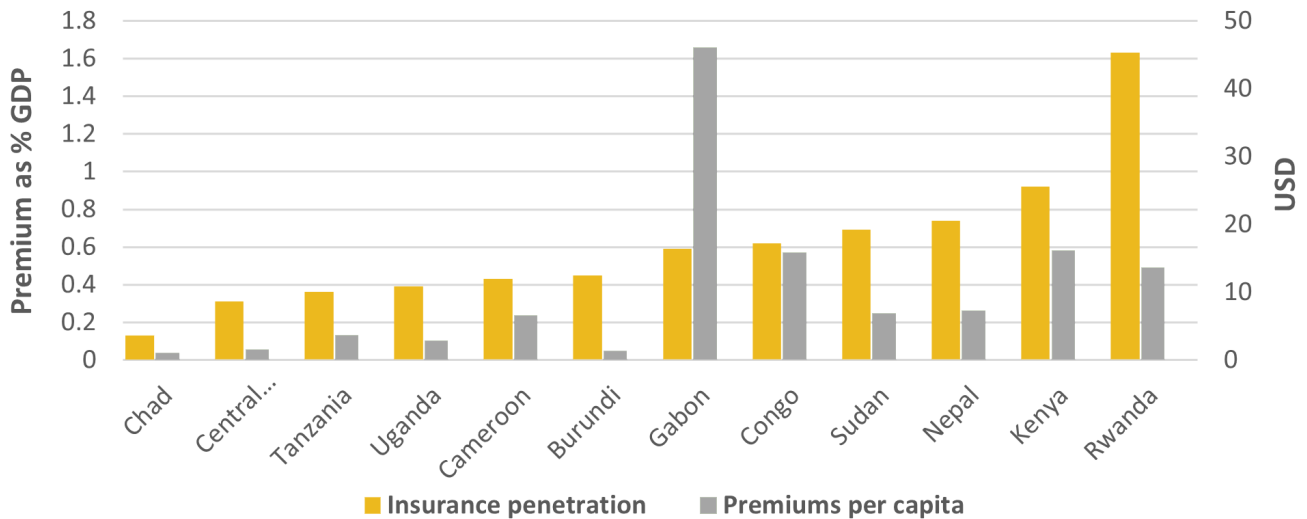
Note: GWP = gross written premium.

### 4.2. Non-life insurance market performance

**Non-life insurance penetration has doubled since 1991 while insurance density has increased nearly 32-fold; these trends indicate that the industry is both deepening and broadening.** Premium per capita increased from UGX 320 in 1991 to UGX 10,308 in 2020. However, penetration

and density are lower than in comparable countries like Nepal and Kenya (Figure 26), as well as within Eastern and Central Africa. The non-life insurance market is stable with a growing asset base and stable claims ratio. However, the underwriting margin is thin (see annex D for further details).

FIGURE 26: INSURANCE PENETRATION AND DENSITY IN SELECT AFRICAN COUNTRIES, 2019



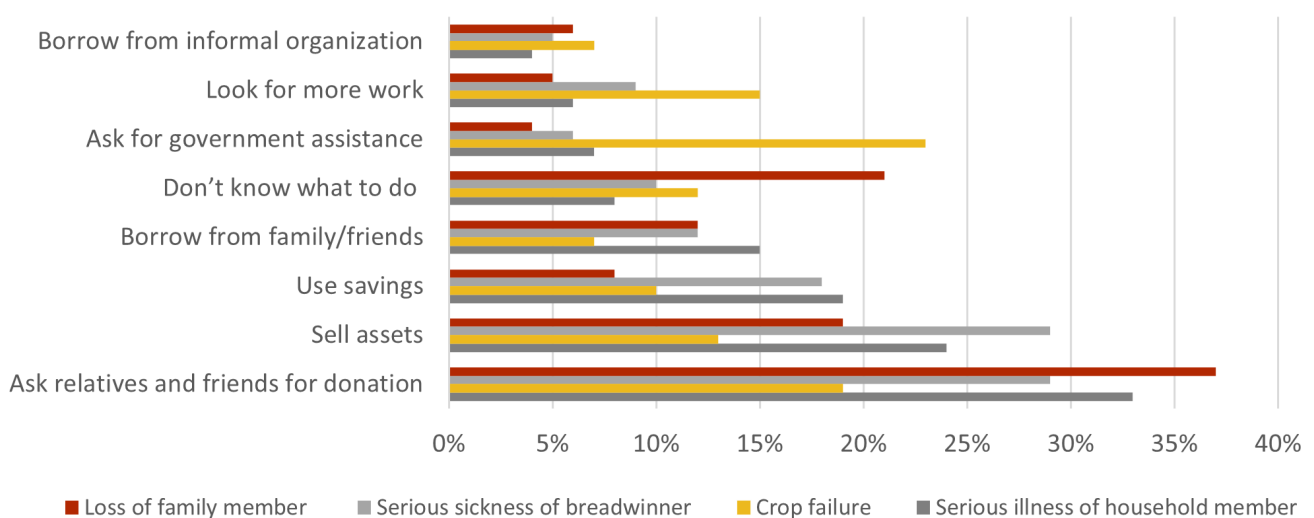
Source: Axco 2021.

**Non-life insurance usage is relatively low. Only 10% of small enterprises, 4% of smallholder farmers, and overall 1% of adults in Uganda have formal insurance (FSD Uganda 2018b).**

For health-related shocks, most Ugandans resort to donations from friends and family, while for agricultural shocks they resort to government assistance. Despite several significant flood events in Kampala and elsewhere that have resulted in an average economic loss of US\$140 million for each occurrence, insured losses have been unsubstantial (Axco 2021). Among micro,

small, and medium enterprises (MSMEs), only 10% of small enterprises and 25% of medium enterprises reported using any insurance for risk management.<sup>23</sup> Only 4% of smallholder farmers reported using insurance, which is well below the level reported in Tanzania (18%). Despite the very low usage of insurance, more than 60% of the Ugandan smallholder households consider insurance important. Notably, there is higher use of savings products than of insurance products in Uganda, which presents an opportunity to leverage savings to crowd in insurance.

FIGURE 27: EX POST COPING MECHANISMS FOR SELECTED EVENTS IN UGANDA



Source: GIZ 2013.

23. MSMEs play a key role in the Ugandan economy; according to the Ministry of Trade, Industry and Cooperatives, in 2015 they employed over 2.5 million people (90% of the private sector) and generated over 80% of manufactured output, which contributed around 20% of GDP.

### 4.3. Crises and disaster-related insurance products

**There is no catastrophe risk pool, and the industry does not offer stand-alone catastrophe cover.** However, standard policies against fire extend cover to include special perils, namely earthquake, flood, windstorm, hail, snow, storm, hurricane, cyclone, tornado, or typhoon. Subsidence and landslide are not included as standard perils but are available as extensions. The government currently does not insure most of its assets or public infrastructure, which exposes the national budget to significant contingent liability.

#### 4.3.1. Property insurance

The major constraint to providing insurance against natural disaster damage to property is the below-average standard of construction of most buildings, particularly residential buildings. Historically, household and homeowner policies were taken out only because of mortgage requirements and then lapsed upon mortgage repayment. However, an increasing middle-class and expatriate population is increasingly taking up cover. Market sources indicate that household insurance accounts for 5% or less of the fire class premiums.

#### 4.3.2. Microinsurance

Despite widespread interest in the development of microinsurance products, very few insurers have developed a specific strategy for growing their microinsurance book. Health and agriculture are areas with potential for microinsurance. Except for group credit life, insurance is primarily sold through the traditional broker/agent model, which is too costly for microinsurance and has limited reach (as traditional brokers and agents have very limited presence outside Kampala). The major constraints include limited local expertise in designing and implementing microinsurance programs; limited availability of cost-effective mechanisms for product delivery, service, and collection of premiums, especially for products not linked to the extension of credit; and very low levels of awareness and appreciation of the benefits of insurance among the general public.

### 4.3.3. Social unrest and violence

There is no insurance cover for social unrest-related risk, although such insurance has been developed in other countries. In South Africa, for example, a national special risk insurance pool was piloted to respond to social unrest incidents in the 1970s. This pool-the South Africa Special Risk Insurance Association-evolved into a state-owned insurer (Sasria). In Uganda, an AI-driven model of social risks might inform the development of a similar state-backed approach. More details on Sasria are presented in annex D.

### 4.4. Key messages

- The insurance sector in Uganda is relatively small but with stable performance and a growing asset base.
- Non-life insurance usage is relatively low; only 1% of adults have formal insurance because it is hard to afford. Adoption of microinsurance regulations and the national insurance policy is expected to contribute to making insurance more inclusive.
- Most households rely on donations from family and friends and on government assistance to cope with shocks.
- The government currently does not insure most of its assets or public infrastructure, which exposes the national budget to significant contingent liability.
- Agricultural insurance is severely constrained by the limited availability of insurance-quality agriculture and meteorological data and by limited financial awareness.

## 5. FISCAL GAP ANALYSIS AND RISK FINANCING STRATEGIES

**This section details analysis conducted to estimate the fiscal costs of disaster relief in Uganda. The costs of recovery and rehabilitation are excluded from this assessment.** The analysis was conducted in two steps. First, the historical cost of response between 1997 and 2020 was estimated using the number of people either affected by disasters or in need of emergency food assistance, and an assumed cost of relief per person.<sup>24</sup> Second, the estimated historical cost of disaster response was scaled for population growth, and a statistical distribution was fitted. The fitting exercise assessed several distributions prior to selecting a distribution that best fit the relief costs data. Based on this fitted distribution, a Monte Carlo simulation was carried out to simulate 15,000 years of losses. These simulated relief costs, shown in figure 28, are indicative of future costs of relief in Uganda. Given that the analysis is partly based on the vulnerability assessment data, the estimates are not specific to any type of disaster but applicable to any disaster that leaves people in need of assistance. In a final step, the indicative expected costs of relief were compared to the available funding to determine the funding gap.

Overall, this analysis is indicative only. For GoU to make decisions, the analysis would need to be refined, with better information on historical fiscal costs, the cost of insurance, etc. The current analysis is limited by scant data on economic losses and fiscal costs of disasters. The Government of Uganda could invest in a national database on economic and fiscal impact and expenditure related to disasters to strengthen the evidence base on DRF and DRM more broadly.

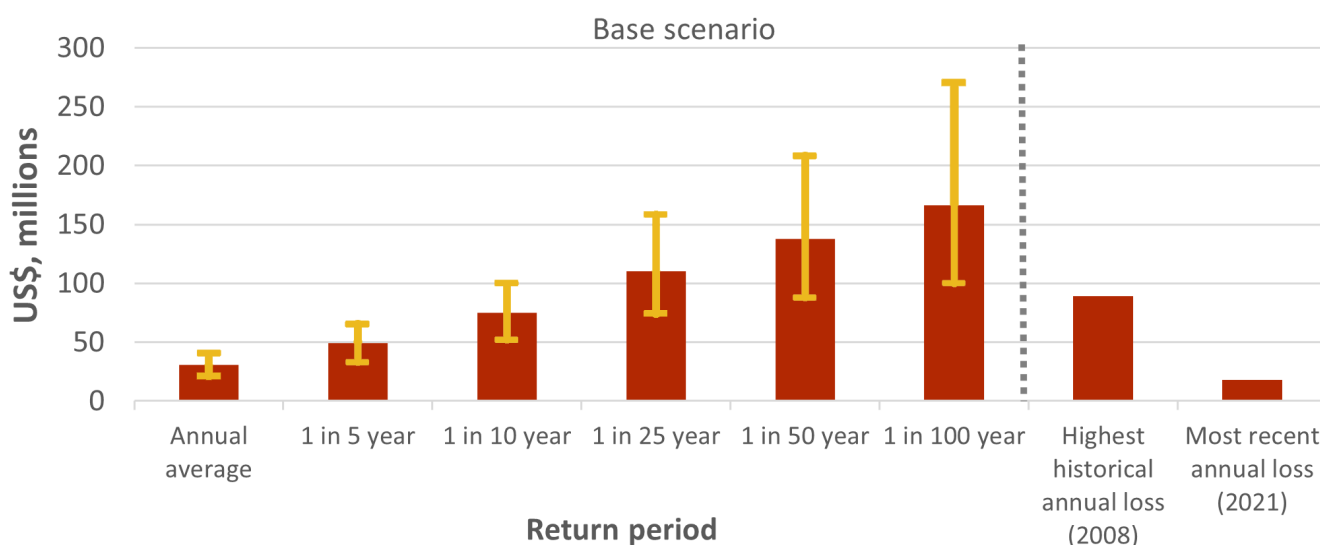
### 5.1. Fiscal cost analysis

**The simulated average annual cost of disaster relief is US\$30.7 million, nearly double the median relief allocation of \$18.5 million, which is estimated to be exceeded once every two years or with a probability of 50% (figure 28).** This estimate excludes the cost of scaling up social protection. The large difference between the average and median demonstrates that the distribution has a large positive skew. This suggests that Uganda has a significant probability of incurring very large relief costs in any given year. For example, the relief cost for an event with a 1-in-50-year return period is estimated at US\$138 million (UGX 512 billion). The return period is the duration over which a loss of the same or greater magnitude should be expected. A 1-in-5-year return period is the estimated annual loss expected to be exceeded once every five years on average; in other words, in any given year there is a 20% probability of a loss at least as great as this. Similarly, a 1-in-10-year return period is the annual loss expected to be exceeded once every 10 years on average, i.e., with a 10% probability. The estimates do not mean these disasters will occur only once every 5 (or 10) years. The error bars in figure 28 show the 95% confidence interval for each return period, which highlights the level of uncertainty in the analysis, given the limited years of data. If the statistical analysis was repeated, the estimated loss at each return period would fall within the error bars. There are fewer data points as the return period increases, so the error bars widen to indicate more uncertainty.

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24. The number of people in need of food assistance is the population classified as IPC3+ by the Uganda Vulnerability Assessment Committee (UVAC); the lives affected by disasters in a year is as reported by EM-DAT and others. The cost of relief is assumed to be US\$50 per person.

FIGURE 28: SIMULATED AVERAGE ANNUAL LOSS DUE TO DISASTERS IN UGANDA FOR VARIOUS RETURN PERIODS

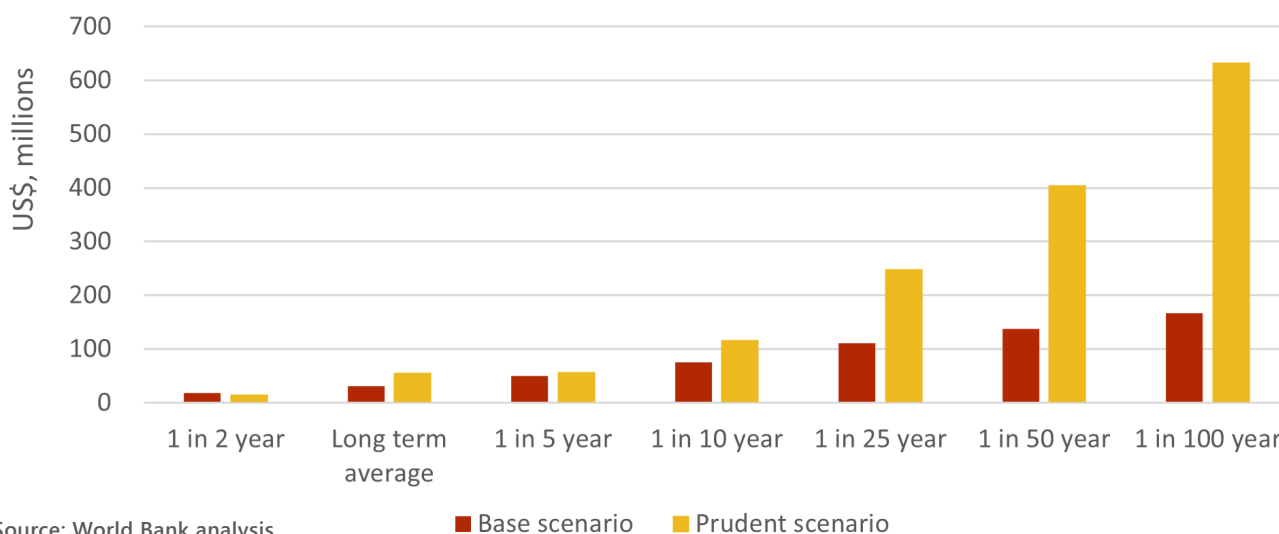


Source: Calculations by World Bank staff based on EM-DAT, [www.emdat.be](http://www.emdat.be); Uganda Vulnerability Assessment Committee (UVAC).  
 Note: Error bars (in green) indicate 95% confidence interval.

**The simulated average annual cost of disaster relief increases to US\$55.3 million under a prudent scenario, in which the frequency and severity of losses increase (figure 29).** Climate change and other emerging crises are expected to increase the frequency of extreme shocks, which would result in higher costs of relief at high return periods. Therefore, for the prudent scenario the

statistical analysis selected a distribution with a higher frequency of extreme events.<sup>25</sup> Based on the statistical distribution, the impact of climate change and compound shocks like COVID-19 could increase the long-term average cost of relief by up to 80%, and could increase the 1-in-50-year cost by nearly 300% compared to the base scenario.

FIGURE 29: SIMULATED AVERAGE LOSS DUE TO DISASTERS AT VARIOUS RETURN PERIODS: BASE SCENARIO VERSUS PRUDENT SCENARIO



Source: World Bank analysis.

■ Base scenario ■ Prudent scenario

25. The prudent scenario selected a log-normal distribution, which is characterized by heavy tails compared to the Weibull distribution selected under the base scenario.



## 5.2. Fiscal gap and risk financing strategies

To assess the funding gap at various return periods, the indicative distribution of fiscal costs of relief presented in the preceding sections was then compared to the funding currently available to the GoU. The analysis also compared relief costs and potential coverage provided by alternative risk financing strategies that GoU could consider. When the GoU develops a national disaster risk financing strategy, it will be important to decide on the level of risk that the national balance sheet can retain and the amount to transfer to private financial markets, which will be limited by the costs of the various instruments.

**This analysis illustrates the following trade-offs that GoU would need to consider:**

- Different risk financing instruments have different costs and differ in cash flows; for example, reserves incur a delayed opportunity cost, while insurance has an up-front cost of premiums.
- Holding large reserves entails an opportunity cost; but if a major event occurs in the absence of reserves, mobilizing funding through budget reallocation and borrowing can result in avoidably high disaster response costs.
- Budget reallocations carry a high opportunity cost, as resources are channeled away from planned high-yielding social and capital investments.
- Ex post borrowing is especially costly for states without an A credit rating, and many countries face challenges raising debt after a shock, which results in high time costs. Furthermore, a disaster event can result in a credit downgrade and trigger a debt crisis.
- Insurance is suited for relatively extreme events—that is, events occurring less frequently than every 5-10 years, on average. It is more cost-effective for insurance to cover only a share of the costs.

The analysis demonstrates how the Government of Uganda could develop a risk financing strategy using risk layering, in which multiple financial instruments balance risk retention and risk transfer (Strategy B), and compares this strategy to the current financing approach (base strategy). The total available funding under each strategy is presented in figure 30.

- **The base strategy consists of a reserve fund of US\$17 million, budget reallocation of US\$16 million, insurance with a total sum insured of US\$430 million, and a cession of 20%.**<sup>26</sup> The reserve fund of US\$17 million is based on the existing contingency fund of US\$16.7 million under the National Treasury. Ex post budget reallocation of US\$16 million is based on the highest reallocation amount in the last five years, which is US\$15.7 million. Insurance is based on the existing Uganda Agriculture Insurance Scheme, which currently covers 230,000 farmers with a total sum insured of about US\$430 million through traditional MPCl and AYll. This is assumed to trigger when the reserve fund and budget reallocation are exhausted, but the UAIS operates separately and in parallel to public financing of disasters by government. Insurance is assumed to cede 20% of the risk layer; this is because it covers only farmers even though other sectors are also exposed to disaster losses. Based on available data, the agricultural sector constitutes between 14% and 20% of total economic losses due to disasters. This base strategy is only illustrative, as Uganda does not have a defined financing strategy in place.
- **Strategy B consists of a reserve fund of US\$25 million, contingent credit of US\$50 million, and sovereign insurance with a maximum payout of US\$75 million and a ceding share of 100%.** The instruments are layered. The reserve fund covers up to 1-in-2.5-year-event losses. Contingent credit covers up to 1-in-10-year-event losses, while insurance covers up to 1-in-50-year-event losses.

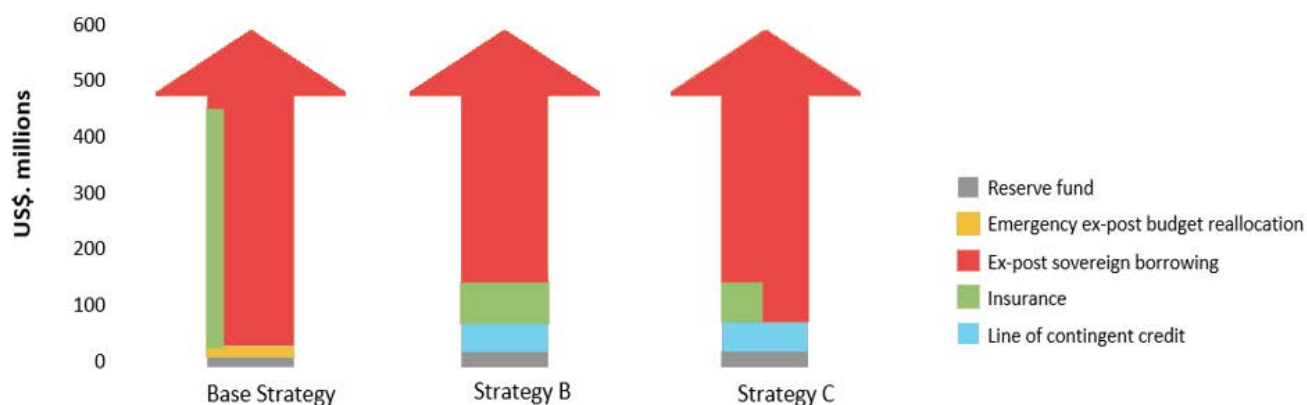
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26. Cession is the portion of risk insured that is transferred to the insurance company by the insured.

The strategy assumes that the reserve fund is exclusively for natural disaster relief and incurs small administrative costs. The contingent credit used for illustrative purposes is a World Bank Catastrophe Deferred Drawdown Option (Cat DDO), of which the maximum amount for Uganda is US\$187 million.<sup>27</sup> The sovereign insurance is assumed to cover all perils and has a 100% ceding share, which means all losses in the sovereign insurance layer are protected. The attachment is set such that insurance pays out when costs of relief exceed US\$75 million, which is the cost of a 1-in-10-year loss event. Insurance would cover losses above those covered by the other two funding instruments (reserve fund and contingent credit). Any losses beyond the insurance exhaustion point, which has been set at a 1-in-50-year loss of about US\$150 million, would not be covered by the insurance. In such a rare event, GoU would raise additional funds through borrowing.

- **Both strategies include unlimited ex post borrowing to fund residual risk. Under the base strategy, Uganda would resort to borrowing and donor aid for moderate (around 1-in-5-year) events.** Figure 31 illustrates a breakdown of instruments used under the base strategy and Strategy B for annual average loss events, 1-in-10-year events, and 1-in-50-year events. The gray and yellow layers could be interpreted as the funding gap, as no prearranged funding exists for these layers, and emergency ex post funding is required instead. Under Strategy B, prearranged funding would fully cover 1-in-50-year loss events. In contrast, GoU would require ex post budget reallocation to cover 1-in-50-year loss events under the base strategy. Strategy B minimizes the need for ex post sovereign borrowing; thus it could reduce costs and save time, which strengthens financial resilience to crises and disasters.

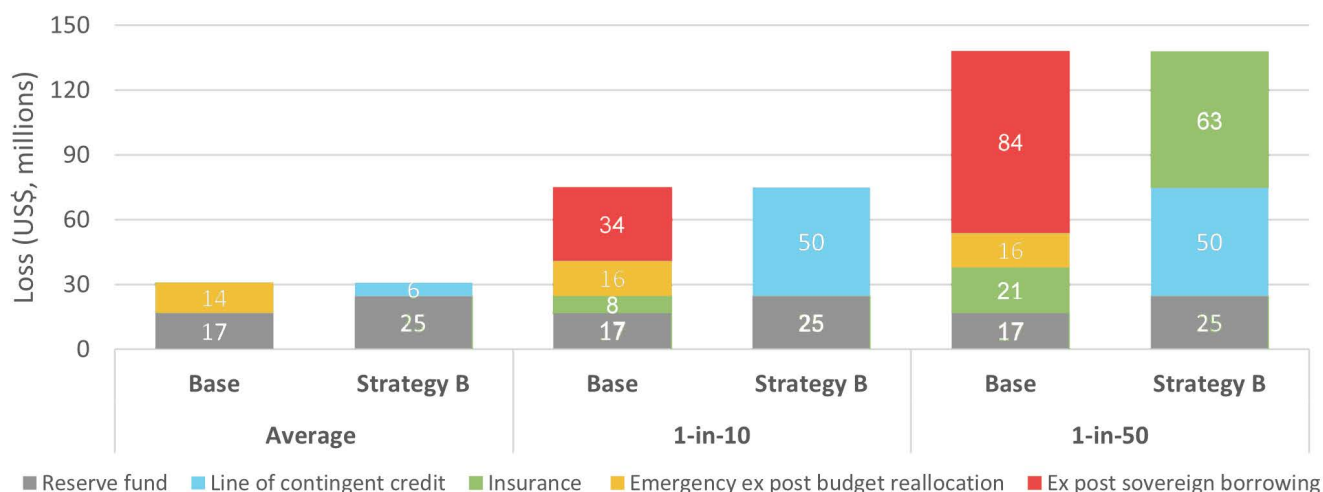
FIGURE 30: FUNDS MODELED UNDER EACH RISK-LAYERING STRATEGY (US\$, MILLIONS)



Source: World Bank analysis.

27. The Cat DDO is limited to US\$50 million in line with the risk profile and risk-layering framework. Additional modeling not presented in this report indicates that increasing the amount of contingent credit would be suboptimal, i.e., significantly more costly for moderate to severe events and marginally less costly for average and mild events.

FIGURE 31: BREAKDOWN OF INSTRUMENTS USED TO FUND DIFFERENT SIZES OF LOSS FOR EACH DRF STRATEGY UNDER THE BASE LOSS SCENARIO

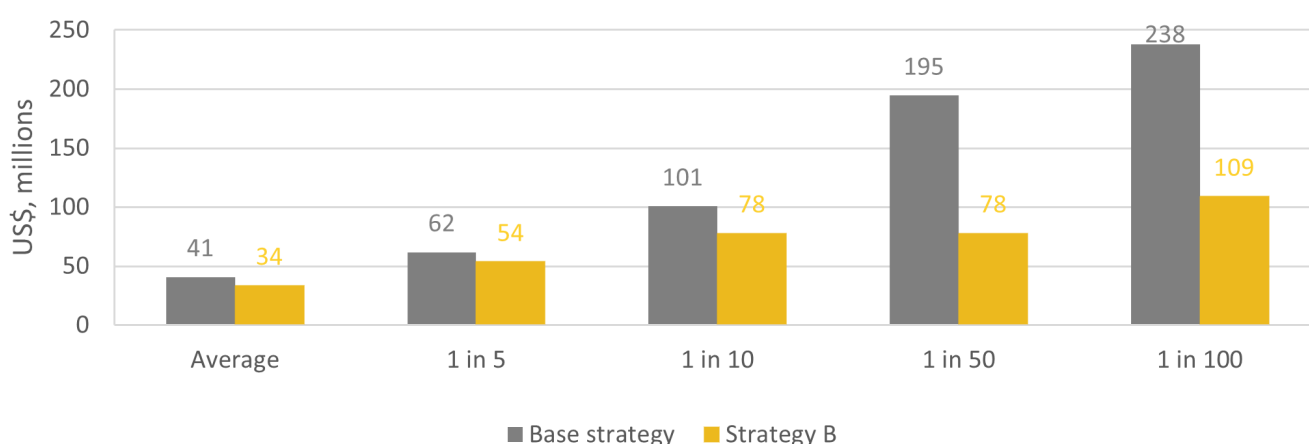


Source: World Bank analysis.

**Based on the indicative distribution of simulated losses, the analysis shows that a risk-layered financing strategy could be more cost-efficient, both on average and for more extreme events. Strategy B could create annual average savings of US\$7 million compared to the base strategy (Figure 32).** Budget reallocations carry a high opportunity cost (the analysis assumes a

social rate of return on investments of 12%), and ex post borrowing is costly (the analysis assumes an ex post borrowing rate of 19%). As these financing instruments are used less frequently under Strategy B, a risk-layered strategy could create significant savings compared to using the base strategy.

FIGURE 32. THE POTENTIAL OPPORTUNITY COST OF FUNDING DIFFERENT SIZES OF LOSS OVER THE NEXT YEAR FOR EACH DRF STRATEGY UNDER THE BASE LOSS SCENARIO

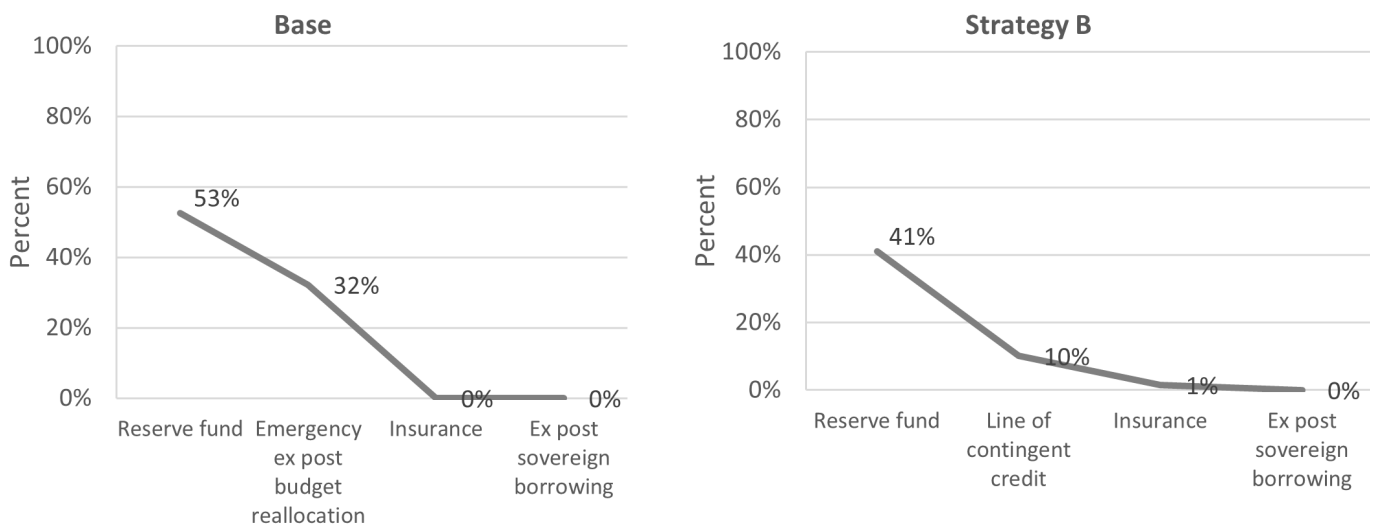


Source: World Bank analysis.

The analysis further indicates that savings could increase with the severity of losses, so that a risk-layering strategy becomes even more cost-effective for major disasters (at return periods of 1-in-10 years or more). Savings are estimated at US\$7 million for low-frequency (less than 1-in-5-year) events, but they could increase to US\$23 million for 1-in-10-year events and US\$117 million for a 1-in-50-year loss. This change reflects the higher up-front costs—for arranging the contingent credit and paying the insurance premium—of Strategy B. The significant savings for moderate to extreme events demonstrate the ability of insurance to mitigate the financial impact of larger costs as the premium leverages additional capital. This analysis is indicative only. For GoU to make decisions, the analysis would need to be refined, with better information on previous fiscal costs, available funding, and economic assumptions underlying the analysis, such as interest on sovereign debt, the discount factor, and the cost of insurance.

Under Strategy B, GoU would have a wider range of risk financing options that can be triggered after disasters, including sovereign insurance to protect the budget against some of the cost from severe events. A risk-layered strategy would reduce the likelihood of exhausting both the risk retention and risk transfer instruments. The chance of exhausting the reserve fund each year is reduced from 53% to 41% under Strategy B, although there is a 10% chance each year that the contingent credit of US\$50 million will be exhausted, at which point the sovereign insurance would be triggered (figure 33). This multi-peril insurance is designed to protect the budget against high-impact catastrophic events. In the rare event that the insurance is exhausted (this has a 1% chance of happening), GoU would resort to ex post borrowing.

FIGURE 33: PROBABILITY OF INSTRUMENT EXHAUSTING UNDER EACH DRF STRATEGY



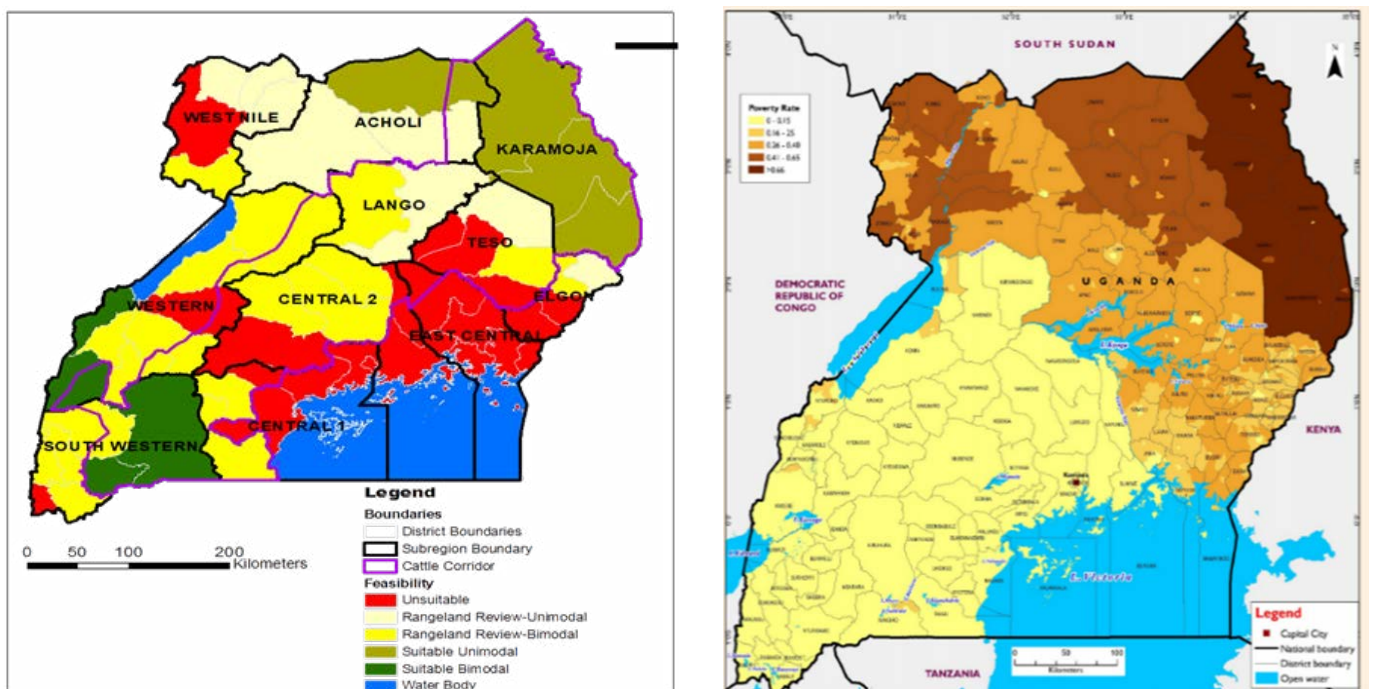
Source: World Bank analysis.

### 5.3. Shock-responsive social protection cost analysis

Given government’s limited fiscal space, filling the gap arising from disaster could be a challenge; thus it is important to prioritize a social protection system that is shock-responsive and focuses on the poor and vulnerable. Further analysis was conducted to estimate the indicative cost of scaling up the LIPW social protection program beyond Karamoja. This assessment was conducted at regional level because district-level data on the number of food-insecure households were unavailable outside of Karamoja and Teso. A follow-up shock-responsive social protection program would require more

detailed analysis at district level to ensure more precise cost assumptions and targeting; priority could be given to districts within the cattle corridor, given cattle’s high vulnerability to drought, as well as to districts in West Nile and Acholi with higher poverty rates. The assessment used Integrated Food Security Phase Classification (IPC) data on food insecurity rather than the normalized difference vegetation index (NDVI) as the basis of a scale-up trigger.<sup>28</sup> The technical feasibility of the NDVI signal is limited to Karamoja and northern Acholi. Assessment of other drought indexes is needed in areas where NDVI is unsuitable (figure 34).

FIGURE 34: NDVI TECHNICAL FEASIBILITY ASSESSMENT (LEFT) AND DROUGHT RISK EXPOSURE (RIGHT) IN UGANDA



Source: OPM (2019)

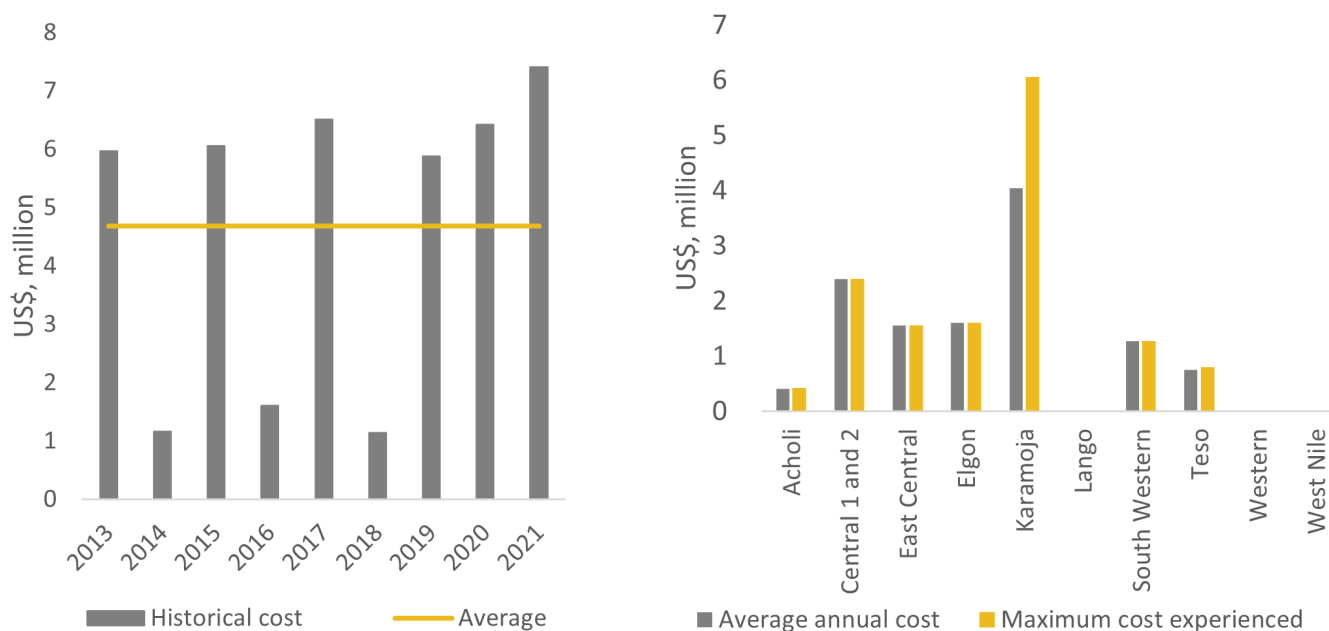
28. NDVI is a vegetation index that measures the state of plant health based on how the plant reflects light at certain frequencies. NDVI values are also known to have a high correlation with crop yield, meaning the index can be used as a tool for measuring crop productivity and predicting future yield.

**The annual cost of scaling up the LIPW program beyond the Karamoja region is estimated at US\$4.7 million, with the costs largely driven by Karamoja and the Central regions (figure 35).**

The assessment assumes a scale-up design similar to that of the NUSAF 3 DRF mechanism, with the following parameters: a daily wage of US\$1.65 (UGX 6,000), an average of 14 working days during project months, and project length of four months after scale-up. The assessment assumes that the

population requiring humanitarian assistance is classified as phase 3 or worse under the IPC. For consistency with NUSAF 3, the program scales up to 20% of households in the region if at least 4% of households are estimated to have been affected by a shock. In addition, based on humanitarian operations in the region, the program scales up to 100% of households if at least 20% of households are estimated to have been affected.

FIGURE 35: IMPLIED ANNUAL SCALE-UP COSTS PER YEAR (LEFT) AND PER REGION (RIGHT), 2013–21

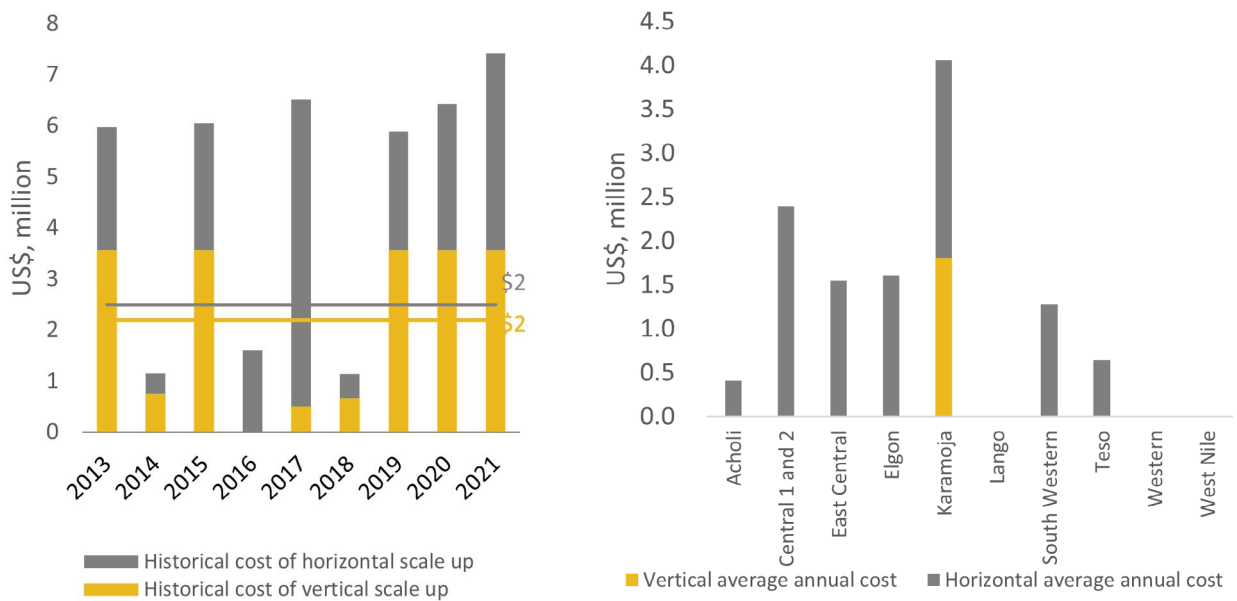


Source: World Bank analysis.

**GoU could prioritize horizontal scale-up to rationalize limited fiscal resources.** Vertical scale-up, in which the duration of assistance to existing beneficiaries is extended, accounts for almost half the cost of scale-up. This is due to the combination of high drought risk exposure and high incidence of poverty in Karamoja. The analysis uses the previous LIPW program in Karamoja as the base safety net program. Scale-up in other regions entails horizontal scale-up, or adding new beneficiaries to the existing program. In Karamoja, scale-up is vertical. As shown in Figure 36, vertical scale-up is experienced only in Karamoja. Both vertical and horizontal

expansion require careful consideration of the best way to scale down following a crisis. In addition, horizontal scale-up has several requirements: ex ante registration of potential beneficiaries in geographic areas not covered by the LIPW program, establishment of payment channels for disbursement of funds, timely and accurate data on needs and vulnerability to ensure effective targeting, deep institutional capacity, and strong coordination to manage the increase. Given the need to rationalize limited fiscal resources, GoU may consider prioritizing horizontal scale-up to reach more beneficiaries.

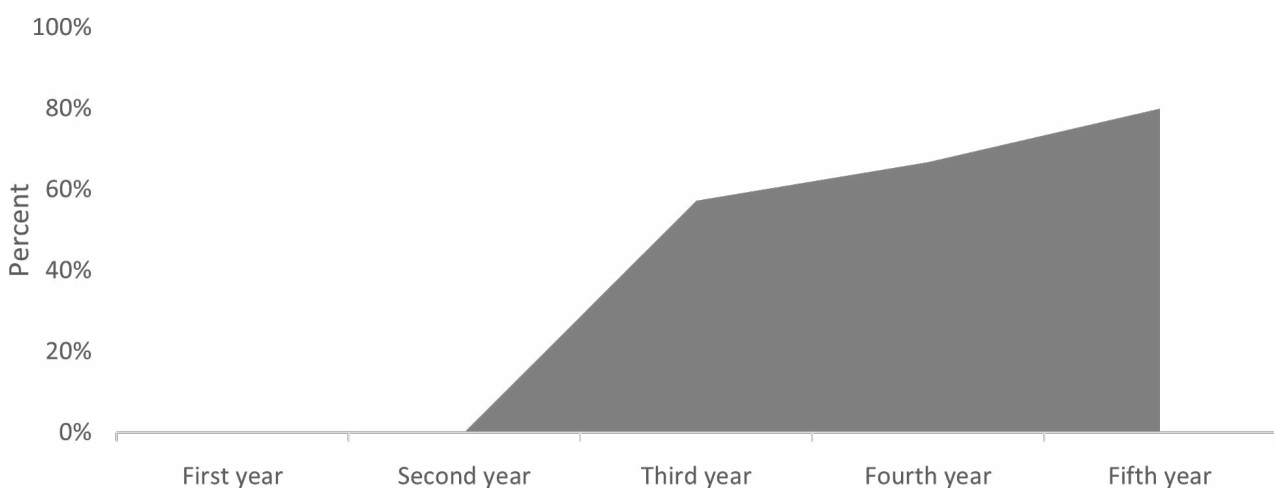
FIGURE 36: HYPOTHETICAL VERTICAL AND HORIZONTAL SCALE-UP COSTS PER YEAR (LEFT) AND PER REGION (RIGHT), 2013–21 (US\$, MILLIONS)



**GoU would need to consider an appropriate financing mechanism for the scale-up.** Assuming US\$8.5 million, or 50% of the current amount of the contingency fund, is ring-fenced for the shock-responsive social protection program, the analysis indicates a 20% chance that the funds may be adequate to cover a five-year program.

There is nearly a 60% chance that the funding would need to be replenished in the third year of the program (figure 37). However, more detailed analysis would be required at implementation stage to refine the cost over the specific number of years of a proposed program.

FIGURE 37: FINANCING OF SHOCK-RESPONSIVE SOCIAL PROTECTION PROGRAM: PROBABILITY OF DEPLETION OF THE RESERVE FUND AFTER THE NTH YEAR



Source: World Bank analysis.

#### 5.4. Key messages

- The simulated average annual cost of disaster relief is US\$30.7 million, but this increases to US\$55.3 million under a prudent scenario, in which climate change or other compounding shocks increase the frequency and severity of losses.
- The annual cost of scale-up of the LIPW program beyond the Karamoja region is indicatively estimated at US\$4.7 million, with the costs largely driven by Karamoja and the Central regions. GoU could prioritize horizontal scale-up to rationalize limited fiscal resources.
- Technical feasibility of the NDVI signal is limited to Karamoja and northern Acholi. Assessment of other drought indexes is needed in areas

where NDVI is unsuitable. GoU would need to consider operational preparedness to implement an appropriate mechanism to finance the scale-up.

- GoU annually faces a funding gap of US\$14 million on average, and for moderate-severity shocks there is 20% chance that the relief funding gap exceeds US\$49 million.
- Based on the indicative distribution of simulated losses, the analysis shows that a risk-layered financing strategy could be more cost-efficient on average and for more extreme events. A risk-layered strategy would reduce the likelihood of exhausting both the risk retention and risk transfer instruments.



## 6. COVID-19 CASE STUDY

In Uganda and globally, COVID-19 and physical climate risks have had severe impacts on economies, public debt sustainability, livelihoods, and poverty, creating compound impacts and reducing resilience to future shocks. From the start of the COVID-19 pandemic until December 2021—a period when GoU was still dealing with the worst locust infestation in decades—at least 10 unique flood and storm events in Uganda affected about 260,000 people. On March 30, 2020, the Government of Uganda implemented a hard lockdown for a 14-day period, in which all nonessential businesses were shut down, public transportation was halted, and curfews were imposed. Lockdown restrictions were further extended through a series of (unforeseen) extensions on April 21, May 4, and May 18. These measures were partially eased starting on May 26, when shops were permitted to reopen; but restrictions on mobility continued to be in place till July 2020. The COVID-19 pandemic has had impacts on public finance and poverty levels similar to those of climate shocks, and the case study below is meant to deepen the understanding of systemic shocks.

**The consequences of the COVID-19 pandemic for Uganda are significant: economic growth slowed down and government borrowing increased due to interventions aimed at mitigating the effects of the lockdown.**

GDP shrunk by 3.2% by the second quarter of FY2019/20. Public debt increased to UGX 57.5 trillion, or 41.6% of GDP, compared to 35.4% of GDP in FY2018/19. Disruption to the hospitality industry resulted in the loss of over 1,000 jobs in tourism and in a deficit of UGX 628.30 billion in nontax revenue. In addition, the country experienced a 50% reduction in business activity and a shortfall of UGX 1,220 billion in international trade tax collections in FY2019/20 (OPM 2021). The private sector was not spared and debt levels shot

up, leaving the private sector more vulnerable to additional exogenous shocks, including climate shocks. Of the total UGX 3 trillion budget for the COVID-19 relief and stimulus program in 2020/21, UGX 2.1 trillion has been set aside to re-ignite business activity (table 5).

**COVID-19 intensified poverty and increased the unemployment rate in Uganda.**

During the first eight weeks of the pandemic, 1.9 million Ugandans fell into poverty, increasing the rate of poverty by nearly 16%. An estimated 60% of informal business owners lost their livelihoods, increasing the unemployment rate from 1.8% in 2019 to 2.4% in 2020. In the past, some Ugandans started their own businesses in times of economic hardship, but this was no longer an option for many Ugandans due to heavy restrictions in movement. The pandemic and the measures taken to control it aggravated food insecurity, limited capacity to cope and recover, and ultimately made people more vulnerable to climate shocks. The many risks associated with COVID-19 and disasters were amplified in urban settings. Urban poor were doubly hit by the rising cost of basics and limited wage-earning options—though just as urban settings amplify risk among vulnerable households, they also provide an opportunity to adapt and build financial resilience. Most government response demonstrated the value of safety nets, from formal social protection to SME relief programs.

**The Ugandan government rapidly mobilized a response to COVID-19 beginning in early March 2020, leveraging its considerable experience with other outbreaks, such as Ebola.**

The government's response included the quick set-up of ad hoc institutional arrangements, rapid pooling and allocation of funds, and the development of operational guidance to health system stakeholders on how to respond. (See annex E for information on the institutional response.)

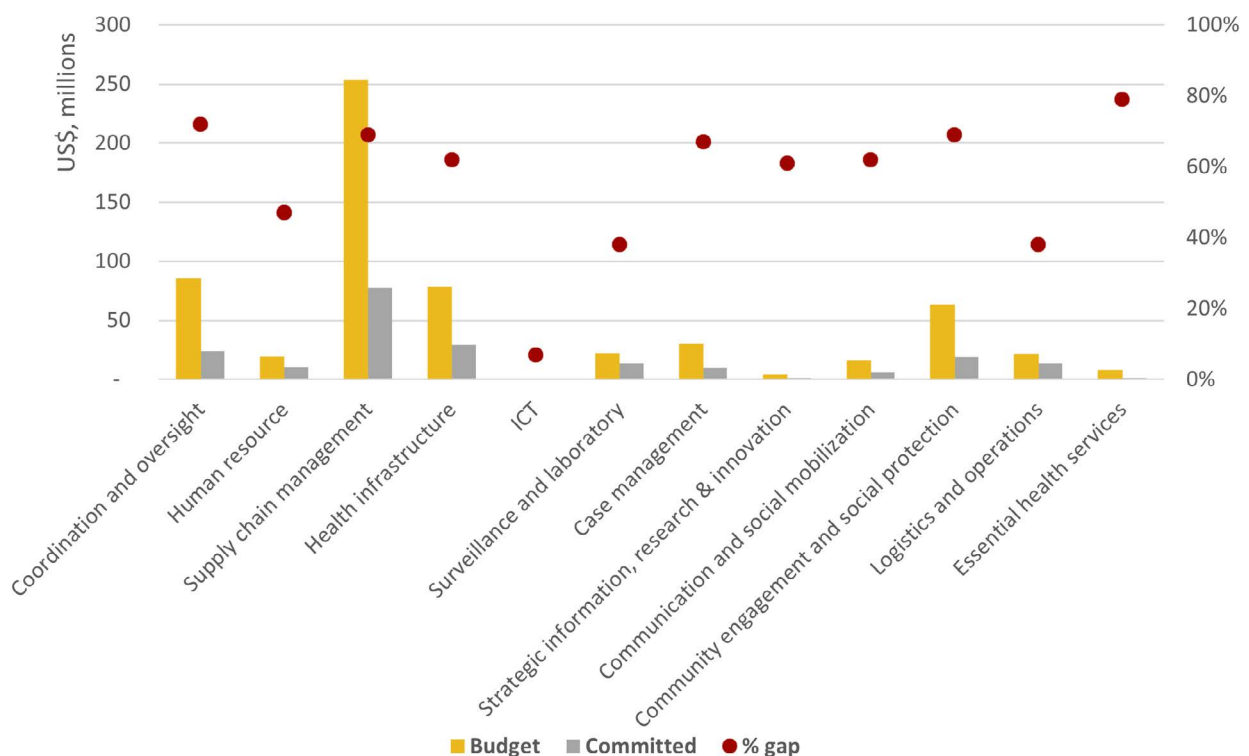
By the end of 2021, GoU had spent \$670 million (around 2% of GDP) responding to the COVID-19 pandemic.<sup>29</sup> In FY2019/20, the spending envelope for critical sectors and vulnerable groups was increased by about US\$270 million (0.7% of GDP) through two supplementary budgets and through budget reallocation of US\$30 million (0.1% of GDP). In FY2020/21, US\$600 million (1.5% of GDP) was allocated for additional COVID-19-related outlays through the budget and two supplementary budgets, of which US\$271 million was allocated for vaccines.

### 6.1. Financial response

#### The government's initial multisectoral COVID-19 response plan for the period March

**2020 to June 2021 faced a funding gap of US\$393 million, or 65%.** The total budget was UGX 2.2 trillion (US\$600 million). As of June 2020, total committed funds amounted to UGX 767 billion, including about UGX 387 billion (US\$104.5 million) already disbursed by the GoU to the various sectors involved in the response as well as funding from on-budget support projects, funding from development partners, and contributions from the private sector and individuals (see figure 38). The largest gaps were in essential health services, coordination, and supply chain management. These gaps could affect government efforts to contain other infectious diseases with epidemic potential, to which Uganda is highly exposed.

FIGURE 38: COVID-19 RESPONSE PLAN BUDGET REQUIREMENT, COMMITMENTS, AND GAP FOR MARCH 2020 TO JULY 2021



Source: MoH, n.d.

29. Government of Uganda COVID-19 budget allocations for FY19/20 and FY20/21 received November 2021.

**Uganda's response to COVID-19 was largely financed through domestic resources and external borrowing, although donors also provided substantial resources (table 5).** Development partners provided significant financial and technical assistance to the response, most of which was for logistics and laboratory services. Table 5 likely presents an underestimate, as most donor funding was provided off-budget, with little coordination of investments across the health sector or with the GoU. A national response fund for COVID-19 was established to

collect private contributions. The fund aimed to raise UGX 170 billion (US\$45 million) to purchase test kits, personal protective equipment (PPE), and vehicles, as well as provide relief to the most vulnerable. The president donated UGX 1.4 million (US\$372,000) per month for six months to the fund and nominated a committee of 15 people to oversee the fund (OPM 2020). Following the spike in government borrowing, in June 2020 Fitch revised its Uganda credit rating outlook to negative.



**The largest expenditure items were payment of domestic arrears to government suppliers and recapitalization of the Uganda Development Bank, followed by expenditures in the health sector (table 5).** Total health expenditures amount to about US\$77 million. Funding to national and regional referral hospitals and to districts was on a prescriptive activity-based approach. Funding to referral hospitals aimed at scaling up critical treatment capacity and was tied to specific preventive and response activities. District hospitals and lower-level facilities received PPE and infection prevention and control commodities,

which were centrally procured. Each of the 134 districts received an additional UGX 165,530,299 (US\$44,385) for coordination and specific Non-Pharmaceutical interventions, such as setting up isolation centers and surveillance teams. All districts were allocated the same amount despite varying needs, capacities, and COVID-19 risk. This uniform rather than risk-based approach could affect a district's capacity to prevent and contain COVID-19 if it spreads extensively at the community level. In addition, this activity-based approach does not allow for the flexibility required by the changing nature of the outbreak.

TABLE 5: COVID-19 FUNDING SOURCES AND EXPENDITURE

	<b>Funding</b>		<b>Expenditure</b>		
	US\$ million	UGX billion		US\$ million	UGX billion
<b>IMF loan</b>	491.50	1,745	Emergency response <sup>59</sup>	75	289
<b>Reallocation</b>	104.49	371	Support for MSMEs	50	178
<b>Supplementary budget</b>	75.00	284	Youth empowerment	82	290
<b>World Bank<sup>61</sup></b>	30.29	108	Women empowerment	7	23
<b>Development partners</b>	68.99	247	Social protection	54	192
<b>Private sector</b>	3.46	12	Import-export promotion	36	126
<b>National response fund</b>	14.08	50	Agriculture inputs	3	10
<b>Total</b>	<b>787.81</b>	<b>2,817.11</b>	Industry and research	17	61
			Health	70	247
			Recapitalization of UDB <sup>63</sup>	157	558
			Payment of arrears	191	677
			<b>Total</b>	<b>665</b>	<b>2,363</b>

Source: MoH, n.d.

Note: IMF = International Monetary Fund; MSMEs = micro, small, and medium enterprises; UDB = Uganda Development Bank.

a. Emergency response activities occurred across health, security, local government, Kampala Capital City Authority (KCCA), and disaster and preparedness. The health sector received the largest amount—US\$27 million, or 36%; however this was much lower than the US\$123 million initially requested.

b. On March 31, 2020, the Ministry of Finance, Planning, and Economic Development requested an additional UGX 284 billion (US\$75 million) from Parliament. These resources were drawn from a recently approved €600 million loan from international banks to provide budget support for FY2019/20, as several activities originally projected under Q4 were no longer implementable

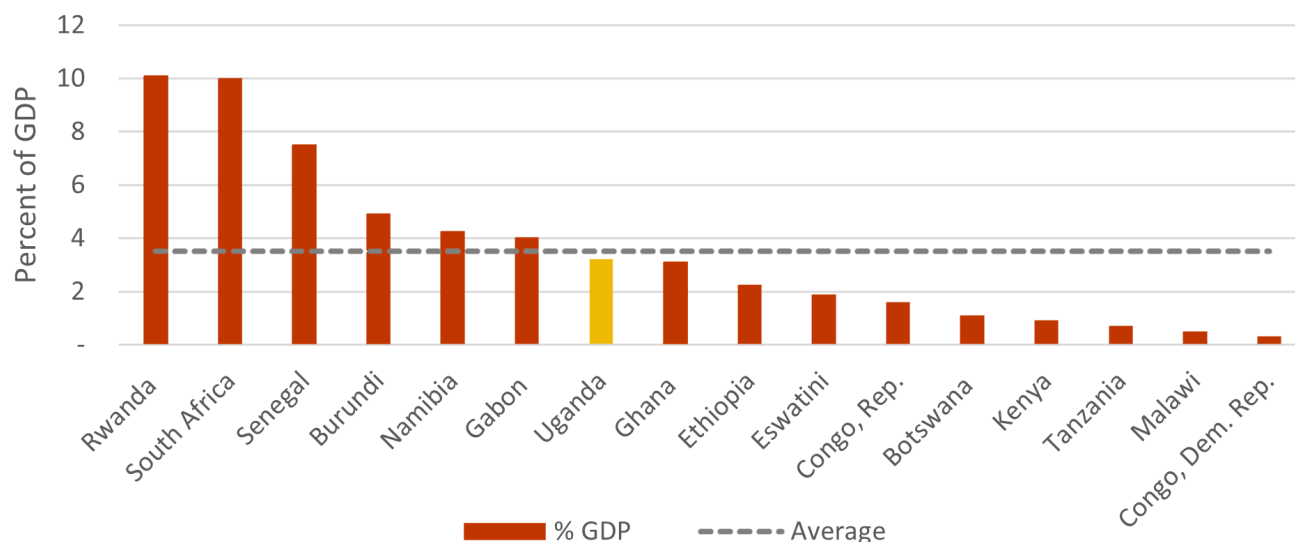
c. World Bank funding includes funding through a Contingency Emergency Response Component (CERC) of a World Bank project.

d. By June 2020 the national response fund had raised UGX50 billion in cash and in kind (New Vision 2020).

Compared to the response packages of other countries in Sub-Saharan Africa, Uganda's COVID-19 response package was in the middle

of the range and slightly below average, at about 3.2% of GDP (figure 39).

FIGURE 39: COVID-19 RESPONSE PACKAGE AS SHARE OF GDP FOR SELECTED SUB-SAHARAN AFRICAN COUNTRIES



Source: IMF 2021.

Note: The expenditures are for all support measures to be implemented by the government. SSA = Sub-Saharan Africa.

**Uganda could potentially leverage the unprecedented need created by COVID-19 to improve its public financial management systems.** Apart from the rapid release of funds, there have not been any substantial changes in public financial management processes. However, preventive actions could be taken to improve budget execution rates, especially foreseeing the reduction of activities conducted under certain grants. Subnational health authorities and frontline providers could be granted greater autonomy during the response to allow for more flexibility to adapt the response to local needs.

**For MSMEs in Uganda, the economic shock led to losses estimated at between UGX 4.6 trillion to UGX 5.7 trillion, translating to 3.17% to 3.91% of the national GDP (UNCDF et al. 2020).**<sup>30</sup> A study in April 2020 (UNCDF et

al. 2020) estimated losses in the formal sector at about 10% of the entire formal sector's GDP in 2020/21 (excluding government).<sup>31</sup> The most affected subsectors were trading and services and the hospitality industry, with losses estimated to reach 28% to 37% of revenue.

According to a survey carried out as part of the study, about 80% of SMEs expected revenue to drop more than 10% year on year. Reduced incomes of informal MSMEs took a particularly heavy toll on manufacturing, sending 46% of businesses below the poverty line or into closure; hospitality (43%) and trading and services (41%) see Figure 40. The study further found that the impact of COVID-19 has a clear gender dimension, in that it affected women's businesses and their earnings to a larger extent than men's.

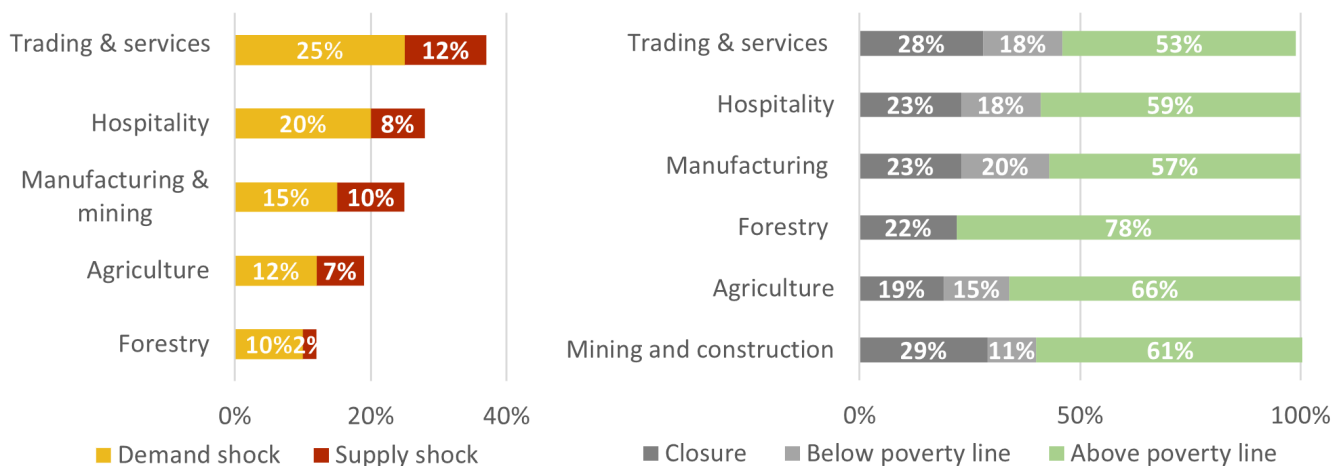
30. The MSME sector in Uganda constitutes 90% of the entire private sector and produces over 80% of manufactured output and about 75% of GDP. It employs over 8.5 million people, equivalent to 90% of total nonfarm workers of the entire private sector (UNCDF et al. 2020).

31. The study was part of a broader socioeconomic assessment of COVID-19's impact assessment on Ugandan micro, small, and medium enterprises in the formal and informal sectors based on a econometric modeling and a business impact survey.

Among all MSMEs affected by COVID-19, there were 11% more enterprises owned or managed by women. That survey also estimated that there would be 100,000 formal sector job losses, and

that 4.4 million informal sector earners' income levels would drop below the poverty line or totally dry up (UNCDF et al. 2020).

FIGURE 40: PROPORTION OF REVENUE LOSS FOR MSMES (LEFT) AND IMPACT OF REDUCED REVENUE ON INFORMAL MSMES (RIGHT)



Source: UNCDF et al. 2020.

**A follow-up survey in late 2020 on the impact of the prolonged lockdown on MSMEs uncovered substantial resilience of informal labor relationships.** Although most workers were let go during the lockdown and 15% of workers migrated to other locations, 76% of the furloughed employees were recalled back to work by the same employer after the lockdown restrictions were lifted. At the same time, however, substantial income losses have taken place: firms earn 30% lower revenues and workers earn 30% less in income than before the lockdown. The results indicated a key role for liquidity and wage support policies to help

impacted firms and workers (Bassi et al. 2021).

## 6.2. Economic recovery

GoU's multisectoral economic recovery stimulus package prioritized infrastructure, food security, and agriculture (figure 41). The largest investment is to strengthen the country's physical infrastructure, specifically, to upgrade waterways, establish a stop hub in the inland port at Tororo, rehabilitate railways, and improve cold storage at the airport. The investment in food systems aims to increase production and ensure safe food storage. Health and medicine is set to receive smaller investments.

FIGURE 41: PROPORTION OF INVESTMENTS UNDER ECONOMIC STIMULUS PACKAGE



Source: (Margini et al, 2020)

### 6.3. Key messages

- Budget allocation during COVID-19 did not follow a risk-based approach but instead an activity-based approach, which could affect districts' capacity to prevent and contain COVID-19 if it spreads extensively at the community level.
- The activity-based approach complicates budget reallocations, as it does not allow for flexibility required by the changing nature of the outbreak.

## 7. RECOMMENDATIONS

Based on the findings of this diagnostic, the following recommendations are formulated for consideration by the GoU. These recommendations are intended to contribute to strengthening Uganda’s financial resilience to shocks and are to be refined according to GoU priorities. Table 6 provides a summary.

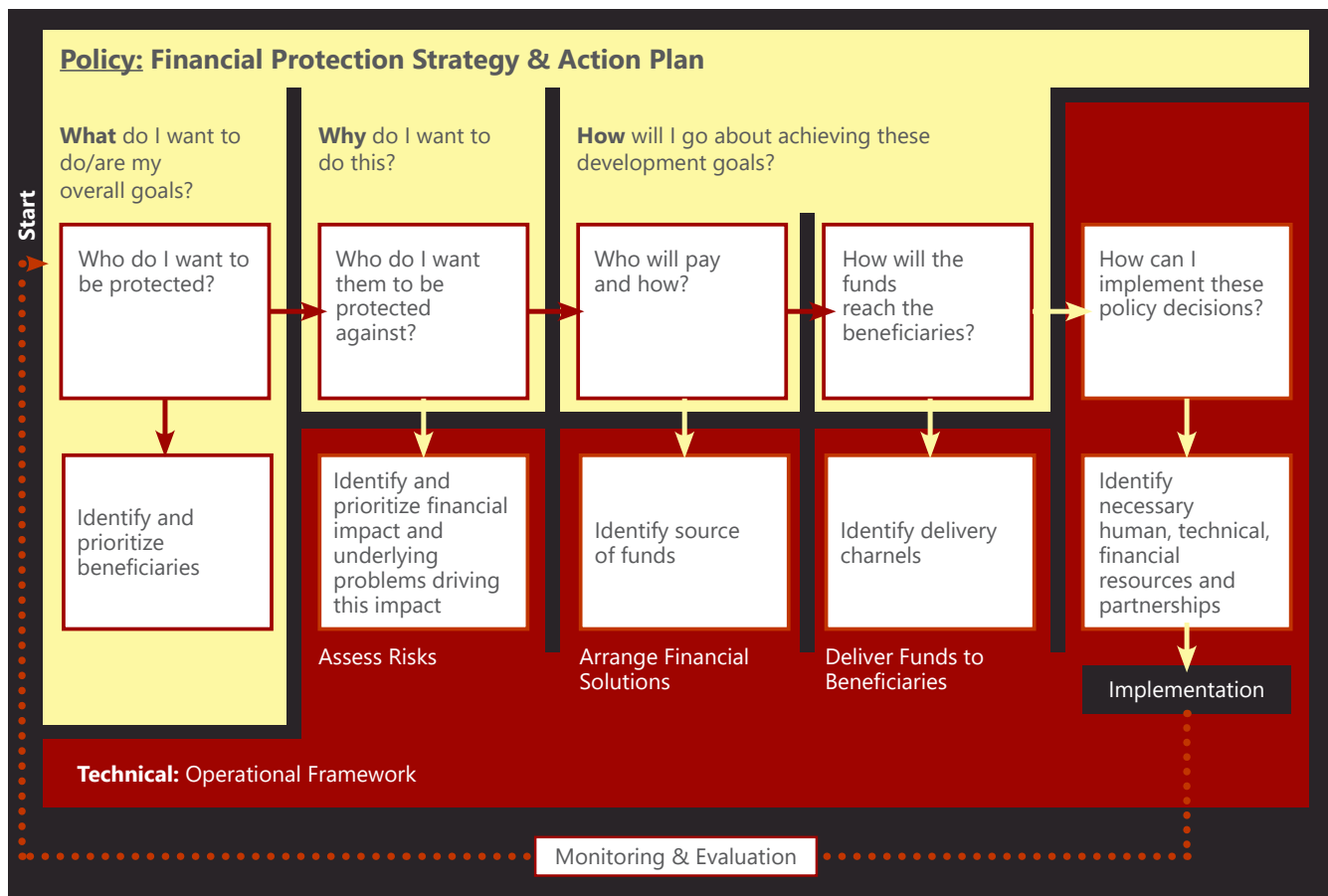
### 7.1. Policy framework and institutional capacity

**Strengthen the policy and institutional framework for response to climate shocks and crises through the following measures:**

- **Develop a comprehensive disaster risk finance strategy under the leadership of MoFPED and in collaboration with Department of Relief, Disaster Preparedness and Management (DRDPM) of OPM.** Some risk financing mechanisms exist, but there is no overarching

strategy. A comprehensive strategy would help avoid fragmentation and ensure the different mechanisms complement each other and support other relevant policy initiatives. It would also strengthen the government’s ability to carry out planning and financial preparation for both social and natural disaster shocks by determining (ex ante) the priorities and the optimal risk-layering approach for addressing disasters and crises of different severities and frequencies. The DRF strategy would lay out which financing sources would be used for which disaster response types, ultimately improving efficiency, timeliness, and transparency of disaster response. To develop such a comprehensive DRF strategy, the government could consider establishing a multisector working group consisting of different ministries and agencies. Doing so would help ensure wide stakeholder buy-in and strengthen coordination. Figure 42 shows a guiding framework to identify and define the policy priorities of the DRF strategy.

FIGURE 42: DRF STRATEGY DEVELOPMENT ROADMAP



Source: World Bank



- **Approve the DRM bill.** The DRM bill will embody and effectuate the existing policy, considering existing laws, and it will serve as the overarching DRM framework. The DRM policy/strategy and DRF strategy will in turn embody and give substance to the DRM law and define how to apply and enforce it. The DRM bill is an opportunity to fill in some gaps in DRM policy, such as the distinction between a state of disaster and a state of emergency, and to develop provisions on financial protection, DRF strategy, and MoFPED’s roles and responsibilities. The distinction between a state of disaster and a state of emergency is important because declaring a state of disaster creates access to innovative risk financing mechanisms such as the Cat DDO, a contingent line of credit that provides budget support to respond to eligible disasters. Refer to Annex B for more information.

- **Improve MoFPED’s capacities in disaster risk finance.** Given the responsibilities and roles of the MoFPED in developing economic, financial, fiscal, and budgetary policies, in planning public investments, and in coordinating public expenditures, it plays an essential role in ensuring financial resilience in disaster response and management. Thus, it is important to build the ministry’s capacities for assessing climate-related financial risks as part of macroeconomic framework and budget planning. A technical assistance program for the MoFPED could start with training on the fundamentals of DRF and advance to more complex topics, such as the assessment and quantification of contingent liabilities from natural disasters and crises and the design and structuring of DRF instruments.

- **Improve the capacities of DRDPM and the Department of Refugees in collection, management, and audit of data on disaster losses, damage, and expenditures.** DRDPM started publishing the Annual State of Disasters Report in 2020; to complement this exercise, the GoU could consider partnering with academia to develop a national database to collect,

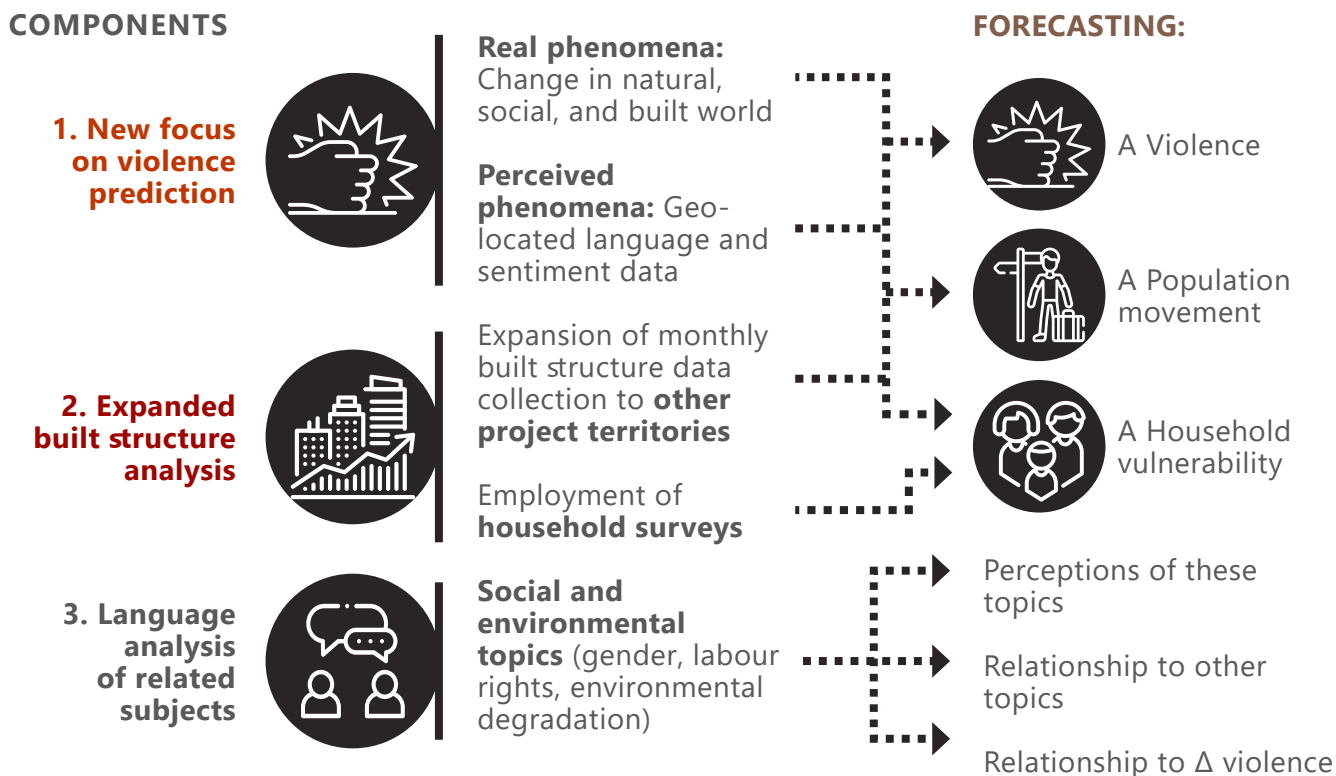
process, and update geospatial information from private and public authorities; the goal would be to clarify the assets and people exposed to disasters, the extent of likely losses and damage, and the likely expenditures for providing relief and recovery. For displacement crises, the Department of Refugees (in the Office of the Prime Minister) could consider an innovative data collection and analysis mechanism, such as a domestic machine learning model like that developed in the Horn of Africa, which monitors and forecasts population change. Such a model would identify factors associated with population change in different locations and inform prioritization of development activities, thereby enhancing planning and development impact.



Beyond population change, this modeling can forecast and identify the factors associated with different social phenomena, including household vulnerability and social unrest (See Figure 43). In addition, for refugee management, OPM could employ conflict risk modeling (as developed for the Democratic Republic of Congo and described in annex C). This AI-driven approach draws on data representing topic-specific online language

sentiment, the economy, weather, GIS, and satellite-generated imagery to inform advanced settlement planning and scale-up of public services. In addition to a capacity development program focused on collection, management, and audit of disaster data, DRDPM and the Department of Refugees could consider technical assistance in select areas to ensure a smooth implementation of their mandate.

FIGURE 43: MULTIPLE RECOMMENDED APPLICATIONS OF SOCIAL RISK MODELS



Source: World Bank



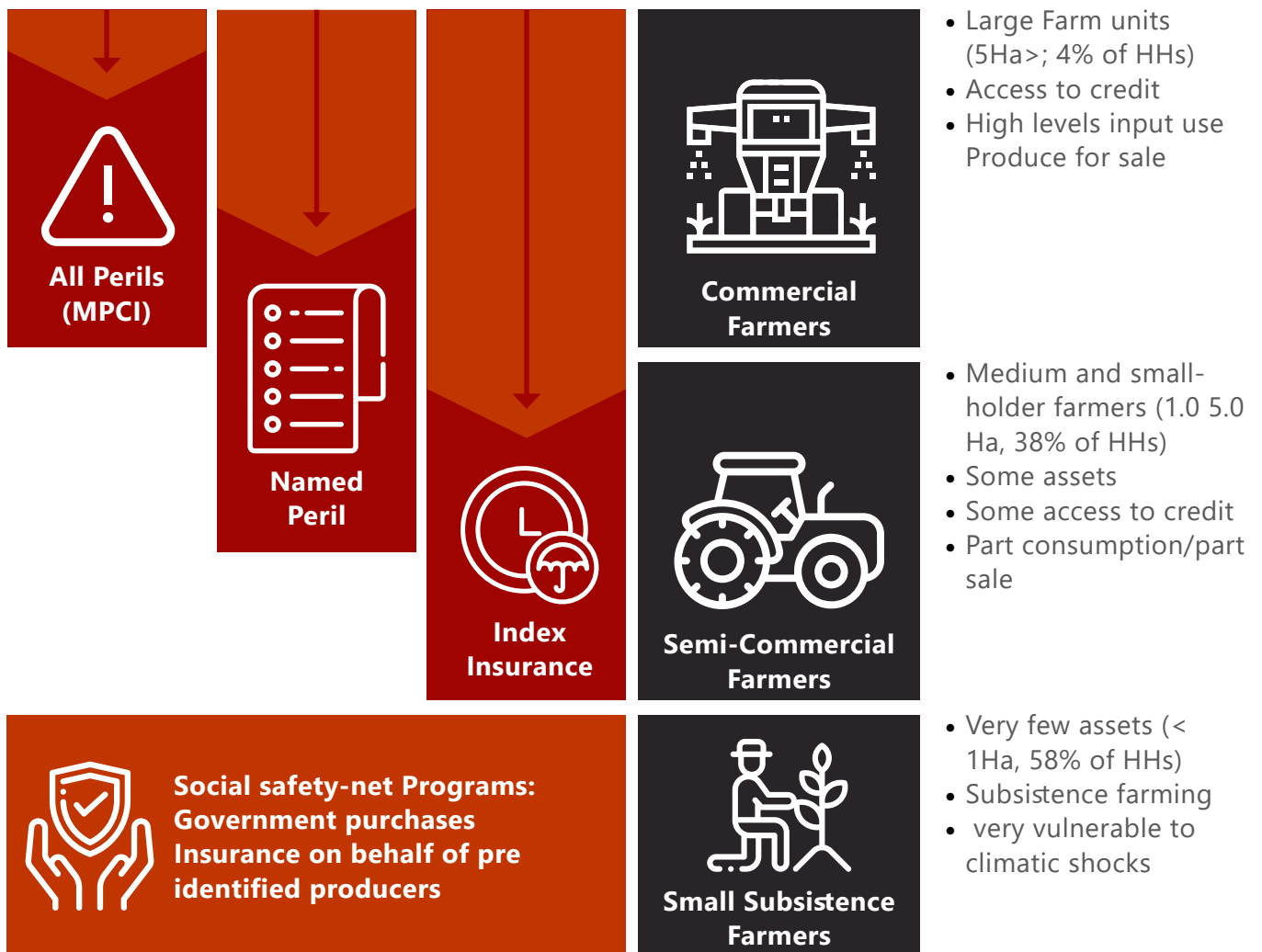
## 7.2. Non-life insurance

*To enhance risk transfer by the GoU, businesses, and households, strengthen insurance markets and the enabling environment for insurance by adopting the national insurance policy and microinsurance regulation.*

- **Expand UAIS to provide insurance products targeting smallholder farmers and herders, and explore the use of agricultural extension services and FinTech for marketing and distribution to ensure the premium subsidy provided by the GoU reaches those most in need.** As illustrated in figure 44, UAIS's main offering is MPCl, which is most suitable for large/

commercial farmers. Pastoralists in rangeland areas (the cattle corridor) are not currently served by the UAIS, yet they remain highly vulnerable to climate shocks. A World Bank (2019b) technical report provided detailed recommendations for enhancing the scalability and sustainability of agriculture finance and insurance in Uganda. GoU could explore the use of agricultural extension services and FinTech solutions to address marketing and distribution challenges. Expansion of UAIS, including specific products—such as index-based livestock insurance and AYll targeting smallholder farmers and herders—will contribute to building the resilience to climate shocks.

FIGURE 44: FARMER SEGMENTATION AND APPROPRIATE INSURANCE PRODUCTS



- **Strengthen the public asset register and develop public asset insurance guidelines.**

There is a need to enhance the collection, management, and analysis of information on the impact of disasters on public assets. An asset registry would empower asset owners with relevant and accurate underwriting information to provide to the insurance market and ensure competitive terms and conditions, particularly cost-effective premiums. The registry could also help to identify the critical assets on which to focus solutions such as public asset insurance. Refer to chapters 4, 5, and 6 of the report on insurance of public assets delivered to the GoU in April 2018 (World Bank, 2018). In addition, terms and conditions should be standardized with up-to-date wordings based on international best practice. Public asset insurance will enhance infrastructure resilience, and the asset registry could record the following types of data:

- o Public asset disaster exposure data, including owner, value, replacement value, building type, and location
- o Public asset historical damage and loss data
- o Public asset insurance policy and insured loss data
- o Hazard and vulnerability data (normally required for modeling and mapping tools and in most cases held by technical agencies or line ministries)

The World Bank could support GoU in developing public asset insurance guidelines to be delivered when the GoU has determined the assets in which they have insurable interest. Additionally, the World Bank could provide basic templates for property exposure and losses databases based on its centralized system (Microsoft Dynamics Customer Relationship Management, CRM) for managing databases related to state properties.

- **Strengthen the technical capacity of the local insurance market.** This step could include training and technical assistance on agricultural insurance, including loss adjustment, crop cutting experiments, and marketing strategies targeted at the low-income population. Training

could also aim to facilitate development and growth of public asset insurance following the issuing of public asset insurance guidelines.

- **Adopt the national insurance policy and regulations on microinsurance.** This step is essential to facilitate low-income earners' access to insurance solutions and to address issues related to making insurance more inclusive. The insurance policy under development presents an opportunity to expand insurance awareness among and provide products to the majority small- and medium-scale farmers, and also to review the premium subsidy policy to ensure better targeting of scarce fiscal resources.

### 7.3. Risk finance

#### ***Strengthen existing prearranged financial instruments and consider additional instruments for moderate to severe shocks.***

- **Strengthen the contingency fund.** The use of contingency funds is increasing in Sub-Saharan Africa, providing governments with access to funds to respond to high-frequency/low-intensity events. Strengthening the existing contingency funds in Uganda could include clarifying the fund's operational procedures, estimating adequacy of allocations to the fund based on the contingent liabilities, earmarking of funds for disaster response, and exploring potential linking of the fund to other disaster risk financing mechanisms in country. Countries like Mozambique and Madagascar (see annex B) have an effective national contingency fund with technical support from the World Bank, as well as financial support to top up the government's resource allocation to the fund.
- **Consider a contingent line of credit.** This instrument would strengthen the resilience of the budget to shocks and provide liquidity in the event of an emergency with minimal impact on the country's credit rating. The funds could be used to respond to any peril as per state of emergency and could be disbursed through existing mechanisms, like social safety nets, the displacement crisis response mechanism, or SME support programs. Alternatively, the funds could be used for disaster response programs led by DRDPM or other ministries.

Adoption of this instrument would require a clear legislative definition of a state of emergency—which would be used to trigger disbursement—and an appropriate macroeconomic policy framework (see annex B on the Cat DDO as used in Kenya).

#### 7.4. Social protection system

##### ***Strengthen social protection systems to reduce vulnerabilities to shocks.***

This step will contribute to building the financial resilience of the poor to future disasters. Social protection systems support people at risk of falling into poverty or provide additional timely assistance to poor and vulnerable people affected by disasters. Strengthening shock-responsive social protection systems might include establishing a sustainable financing mechanism to support the scale-up in the aftermath of shocks; creating enabling mechanisms to alleviate poverty and the impact of COVID-19 via direct income support through an expansion of LIPW, livelihood support, and the promotion of savings mechanisms (Village Savings and Loan Associations, etc.); and supporting social protection for refugees in place of humanitarian support. Therefore, the GoU might consider the following:



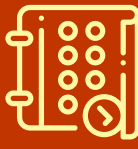
- **Prearrange financing for safety net scale-up.** NUSAF 3 demonstrates the positive impacts of prearranging financing to help meet the needs of the poorest members of society—specifically

reducing food insecurity and protecting against the adverse impacts of shocks on livelihoods opportunities and human capital development. It also demonstrates the savings that can be realized by government. Such financing could be prearranged through a risk transfer instrument or by earmarking a portion of the existing contingency fund.

- **Complement the national social registry.** Include vulnerable households who are not now eligible for direct income support but who could need support in the aftermath of a disaster. This might involve registering individuals and households in areas at risks.
- **Expand access to financial services to support livelihoods promotion.** It is not enough simply to mobilize resources for relief; resources also need to reach the affected beneficiaries when they need them the most and in a transparent manner. Financial inclusion enables households to better manage risk before a shock and to recover after a shock occurs. This ability builds resilience—the ability to mitigate, cope with, and recover from shocks and stresses without compromising future welfare. Leveraging digital solutions such as mobile money will deepen access to financial services (payment systems, safe and effective means to hold savings, transaction history, credit, etc.) in rural areas, while also addressing speed, proximity, and cost constraints.



TABLE 6: RECOMMENDATIONS FOR STRENGTHENING FINANCIAL PREPAREDNESS FOR CRISES AND SHOCKS IN UGANDA

Time frame	Strengthen policy framework and institutional capacity	Strengthen non-life insurance market	Strengthen risk financing	Strengthen social protection systems
 <p><b>Short term</b></p>	<ul style="list-style-type: none"> <li>Develop a comprehensive disaster risk finance strategy</li> </ul>	<ul style="list-style-type: none"> <li>Adopt the national insurance policy and regulations on microinsurance.</li> </ul>	<ul style="list-style-type: none"> <li>Prearrange financing (through a risk transfer instrument or through earmarking a portion of the existing contingency fund) to support safety net scale-ups.</li> </ul>	<ul style="list-style-type: none"> <li>Complement the national social registry</li> <li>Expand access to financial services such as mobile payment system, savings, etc.</li> </ul>
 <p><b>Medium term</b></p>	<ul style="list-style-type: none"> <li>Complete disaster risk management and financing legal framework (approve DRM bill and adopt the national insurance policy and regulations on microinsurance).</li> <li>Strengthen the technical capacity of the MoFPED on disaster risk finance through a dedicated capacity-building program.</li> <li>Improve the capacity of the Department of Relief, Disaster Preparedness and Management and the Department of Refugees to collect, manage, and audit disaster losses, damage, and expenditures.</li> </ul>	<ul style="list-style-type: none"> <li>Complement the national social registry</li> <li>Expand access to financial services such as mobile payment system, savings, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Strengthen the contingency fund by clarifying operational procedures and adopting a risk-informed mechanism for determining annual allocations.</li> </ul>	<ul style="list-style-type: none"> <li>Complement the national social registry</li> <li>Expand access to financial services such as mobile payment system, savings, etc.</li> </ul>
 <p><b>Long term</b></p>	<ul style="list-style-type: none"> <li>Expand UAIS products targeting smallholder farmers and herders and explore the use of agricultural extension services and FinTech for distribution.</li> </ul>	<ul style="list-style-type: none"> <li>Expand UAIS products targeting smallholder farmers and herders and explore the use of agricultural extension services and FinTech for distribution.</li> </ul>	<ul style="list-style-type: none"> <li>Consider contingent credit to protect the budget and provide liquidity in the event of an emergency with minimal impact on the country's credit rating.</li> </ul>	<ul style="list-style-type: none"> <li>Consider contingent credit to protect the budget and provide liquidity in the event of an emergency with minimal impact on the country's credit rating.</li> </ul>

Note: Short term = less than 12 months; medium term = 12–36 months; long term = over 36 months. UAIS = Uganda Agriculture Insurance Scheme.

## REFERENCES

ACLED (Armed Conflict Location & Event Data Project). 2020. "CDT Spotlight: State Force in Uganda." <https://acleddata.com/2020/05/07/cdt-spotlight-state-force-in-uganda/>

Besley, T., P. Collier, and A. Khan. 2018. "Escaping the Fragility Trap." Commission on State Fragility, Growth and Development.

[https://www.theigc.org/wp-content/uploads/2020/10/Escaping-the-fragility-trap\\_Oct-2020.pdf](https://www.theigc.org/wp-content/uploads/2020/10/Escaping-the-fragility-trap_Oct-2020.pdf)

Biryabarema, Elias. 2020. "Uganda Reverses Forest Destruction by Inviting in . . . Loggers." Reuters, September 17, 2020.

Bowen, Thomas Vaughan, Carlo Del Ninno, Colin Andrews, Sarah Coll-Black, Ugo Gentilini, Kelly Johnson, Yasuhiro Kawasoe, Adea Kryeziu, Barry Patrick Maher, and Asha Williams. 2020. Adaptive Social Protection: Building Resilience to Shocks. International Development in Focus. Washington, DC: World Bank Group.

<https://documents.worldbank.org/curated/en/579641590038388922/Adaptive-Social-Protection-Building-Resilience-to-Shocks>

Brakenridge, G. R. 2021. "Global Active Archive of Large Flood Events, 1985–Present." Dartmouth Flood Observatory, University of Colorado.

<https://floodobservatory.colorado.edu/Archives/index.html>

Bündnis Entwicklung Hilft and RUB (Ruhr University Bochum). 2020. World Risk Report 2020.

[https://weltrisikobericht.de//wp-content/uploads/2020/12/WRR\\_2020\\_online\\_.pdf](https://weltrisikobericht.de//wp-content/uploads/2020/12/WRR_2020_online_.pdf)

Calcutt Evie, Barry Maher, and Catherine Fitzgibbon. 2021. "Emerging Lessons in Financing Adaptive Social Protection." World Bank, Washington, DC.

<http://documents.worldbank.org/curated/en/563501611922361155/Disaster-Risk-Financing-Emerging-Lessons-in-Financing-Adaptive-Social-Protection>

CSBAG (Civil Society Budget Advocacy Group). 2018. Financing Mechanisms for Disaster Preparedness, Mitigation and Prevention in Uganda. Ntinda, Uganda: CSBAG and OXFAM.

<https://www.csbag.org/download/financing-mechanisms-for-disaster-preparedness-mitigation-and-prevention-in-uganda/?wpdmdl=1707&refresh=6139b88e59ce91631172750>

Development Initiatives. 2019. "Uganda DRR Budget Tracking: What Are the Key Areas of Investment?" [https://devinit.org/documents/4/Report\\_Uganda-DRR-budget-tracking-What-are-the-key-areas-of-investment.pdf](https://devinit.org/documents/4/Report_Uganda-DRR-budget-tracking-What-are-the-key-areas-of-investment.pdf)

Directorate of Relief, Disaster Preparedness and Refugees, OPM (Office of the Prime Minister). 2010. "The National Policy for Disaster Preparedness and Management."

[https://www.preventionweb.net/files/21032\\_ugandanationalpolicyfordisasterprep.pdf](https://www.preventionweb.net/files/21032_ugandanationalpolicyfordisasterprep.pdf)

EM-DAT: The International Disaster Database. 1966–2020. CRED (Center for Research on the Epidemiology of Disasters), Université Catholique de Louvain, Brussels, Belgium. [www.emdat.be/](http://www.emdat.be/)

FSD Uganda. 2018a. "FinScope Uganda: Topline Findings Report."

<https://fsduganda.or.ug/wp-content/uploads/2018/06/FinScope-Uganda-2018-Report.pdf>

FSD Uganda. 2018b. "Report on Uptake of Insurance Services in Uganda 2018."

<https://fsduganda.or.ug/wp-content/uploads/2019/02/FSDU-Thematic-Report-on-Insurance-2018.pdf>

FSD Uganda. 2020. "Annual Report 2019/2020."

<https://fsduganda.or.ug/2019-2020-annual-report/>

GFDRR (Global Facility for Disaster Reduction and Recovery). 2019. Disaster Risk Profile Uganda. Africa Disaster Risk Financing Initiative. Washington, DC: World Bank Group.

<https://documents1.worldbank.org/curated/en/324521574236798679/pdf/Disaster-Risk-Profile-Uganda.pdf>

Groves, Robert M. 2006. "Nonresponse Rates and Nonresponse Bias in Household Surveys." *Public Opinion Quarterly* 70, no. 5: 646–75.

Guyatt, Helen, Flavia Della Rosa, and Jenny Spencer. 2016. "Refugees Vulnerability Study: Kakuma, Kenya." UNHCR, WFP, and Kimetrica.

<https://reliefweb.int/report/kenya/refugees-vulnerability-study-kakuma-kenya>

Hadzi-Vaskov, Metodij, Samuel Pienknagura, and Luca Antonio Ricci. 2021. "The Macroeconomic Impact of Social Unrest." IMF Working Paper WP/21/135. International Monetary Fund.

<https://www.imf.org/en/Publications/WP/Issues/2021/05/07/The-Macroeconomic-Impact-of-Social-Unrest-50338>

Haken, Nate, and Charles Fiertz. 2018. "Fund for Peace Fragile States Index 2018." Fund for Peace, Washington, DC.

<https://fragilestatesindex.org/wp-content/uploads/2018/04/951181805-Fragile-States-Index-Annual-Report-2018.pdf>

Hallegatte, Stephane, Adrien Vogt-Schilb, Mook Bangalore, and Julie Rozenberg. 2017. *Unbreakable: Building the Resilience of the Poor in the Face of Natural Disasters*. Climate Change and Development Series. Washington, DC: World Bank. doi:10.1596/978-1-4648-1003-9.

IMF (International Monetary Fund). 2021. "Policy Responses to COVID-19: Policy Tracker." July 21, 2021. <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19>

Irish Aid. 2017. Uganda Climate Action Report for 2016.

<https://www.irishaid.ie/media/irishaid/allwebsitemedia/30whatwedo/climatechange/Uganda-Country-Climate-Action-Reports-2016.pdf>

Kaggwa, R., R. Hogan, and B. Hall, eds. 2009. *Enhancing the Contribution of Weather, Climate and Climate Change to Growth, Employment and Prosperity*. Kampala, Uganda: UNDP/NEMA/UNEP Poverty Environment Initiative.

[https://wedocs.unep.org/bitstream/handle/20.500.11822/26899/Weather\\_growth.pdf?sequence=1&isAllowed=y](https://wedocs.unep.org/bitstream/handle/20.500.11822/26899/Weather_growth.pdf?sequence=1&isAllowed=y)



Kasimbazi, E. 2013. Uganda's Economic Development: The Challenges and Opportunities of Climate Change. Kampala, Uganda: Konrad-Adenauer-Stiftung.

Kyatengerwa, Christelle, Daeha Kim, and Minha Choi. 2020. "A National-Scale Drought Assessment in Uganda Based on Evapotranspiration Deficits from the Bouchet Hypothesis." *Journal of Hydrology* 580: 124348.

Mahony, Chris, Eduardo Albrecht, and Murat Sensoy. 2019. "The Relationship between Influential Actors' Language and Violence: A Kenyan Case Study Using Artificial Intelligence." Background Paper, LSE-Oxford Commission on State Fragility, Growth and Development, International Growth Centre.

<https://www.theigc.org/publication/the-relationship-between-influential-actors-language-and-violence-a-kenyan-case-study-using-artificial-intelligence/>

Mahony, Chris, Barry Maher, and Evie Calcutt. Forthcoming. "AI-Driven Violence Forecasting in Eastern DRC." World Bank, Washington, DC.

Meng, Lu, and Rohini K. Srihari. 2019. "Increasing Lead Time and Granularity of Civil Unrest Prediction through Time Series Data."

[https://milet19.github.io/papers/milet19\\_poster\\_7.pdf](https://milet19.github.io/papers/milet19_poster_7.pdf)

Mertens, K., L. Jacobs, J. Maes, C. Kabaseke, M. Maertens, J. Poesen, M. Kervyn, and L. Vranken. 2017. "The Direct Impact of Landslides on Household Income in Tropical Regions: A Case Study from the Rwenzori Mountains in Uganda." *Science of the Total Environment* 550: 1032–43.

<https://doi.org/10.1016/j.scitotenv.2016.01.171>

MoFPED (Ministry of Finance, Planning and Economic Development). 2013. "Annual Budget Performance Report FY2012/13."

[https://www.cabri-sbo.org/uploads/bia/uganda\\_2012\\_execution\\_external\\_year-end\\_report\\_ministry\\_of\\_finance\\_comesa\\_eac\\_igad\\_english\\_1.pdf](https://www.cabri-sbo.org/uploads/bia/uganda_2012_execution_external_year-end_report_ministry_of_finance_comesa_eac_igad_english_1.pdf)

MoFPED (Ministry of Finance, Planning and Economic Development). 2014. "Annual Budget Performance Report FY2013/14."

[https://www.cabri-sbo.org/uploads/bia/uganda\\_2013\\_execution\\_external\\_year-end\\_report\\_ministry\\_of\\_finance\\_comesa\\_eac\\_igad\\_english\\_2.pdf](https://www.cabri-sbo.org/uploads/bia/uganda_2013_execution_external_year-end_report_ministry_of_finance_comesa_eac_igad_english_2.pdf)

MoFPED (Ministry of Finance, Planning and Economic Development). 2015. "Annual Budget Performance Report FY2014/15."

[https://www.cabri-sbo.org/uploads/bia/uganda\\_2014\\_execution\\_external\\_year-end\\_report\\_ministry\\_of\\_finance\\_comesa\\_eac\\_igad\\_english\\_1.pdf](https://www.cabri-sbo.org/uploads/bia/uganda_2014_execution_external_year-end_report_ministry_of_finance_comesa_eac_igad_english_1.pdf)

MoFPED (Ministry of Finance, Planning and Economic Development). 2016. "Annual Budget Performance Report FY2015/16."

<http://library.health.go.ug/sites/default/files/resources/Annual%20Budget%20Performance%20Report%20FY%202015-16.pdf>

MoFPED (Ministry of Finance, Planning and Economic Development). 2017. "Annual Budget Performance Report FY2016/17."

MoFPED (Ministry of Finance, Planning and Economic Development). 2021. "Background to the Budget Fiscal Year 2021/22: Industrialisation for Inclusive Growth, Employment and Wealth Creation." <https://www.finance.go.ug/sites/default/files/Publications/Background%20to%20the%20Budget%202021.pdf>

MoH (Ministry of Health). 2020. "Uganda's Emergency Response to the COVID-19 Pandemic: A Case Study" [https://thinkwell.global/wp-content/uploads/2020/09/Uganda-COVID-19-Case-Study-\\_18-Sept-20201.pdf](https://thinkwell.global/wp-content/uploads/2020/09/Uganda-COVID-19-Case-Study-_18-Sept-20201.pdf)

MoH (Ministry of Health). n.d. "Corona Virus Disease-2019 (COVID-19) Preparedness and Response Plan, March 2020–June 2021." [https://covid19.gou.go.ug/uploads/document\\_repository/authors/ministry\\_of\\_health/document/COVID19\\_PreparednessResponse\\_Plan\\_Signed\\_Vers\\_July20201.pdf](https://covid19.gou.go.ug/uploads/document_repository/authors/ministry_of_health/document/COVID19_PreparednessResponse_Plan_Signed_Vers_July20201.pdf)

MoWE (Ministry of Water and Environment). 2015. "Economic Assessment of the Impacts of Climate Change in Uganda: Final Study Report." [https://cdkn.org/sites/default/files/files/Uganda\\_CC-economics\\_Final-Report2.pdf](https://cdkn.org/sites/default/files/files/Uganda_CC-economics_Final-Report2.pdf)

MoWE (Ministry of Water and Environment). 2021. "Flood Preparedness for Uganda. National Disaster Preparedness Dialogue." November 17–18, 2021.

Mubangizi, P. 2020a. "A Critical Review of the National Policy on Disaster Preparedness and Management: Scenario Modelling from the COVID 19 Pandemic in Uganda." CEPA Policy Series Papers Number 20 of 2020. Kampala. [https://www.researchgate.net/publication/340999973\\_A\\_CRITICAL\\_REVIEW\\_OF\\_THE\\_NATIONAL\\_POLICY\\_ON\\_DISASTER\\_PREPAREDNESS\\_AND\\_MANAGEMENT1](https://www.researchgate.net/publication/340999973_A_CRITICAL_REVIEW_OF_THE_NATIONAL_POLICY_ON_DISASTER_PREPAREDNESS_AND_MANAGEMENT1)

Mubangizi, P. 2020b. "The Civil Society Organisations Meets the Parliamentary Standing Committee on Climate Change." Parliament Watch. <https://parliamentwatch.ug/the-civil-society-organisations-cso-meets-the-parliamentary-standing-committee-on-climate-change/>

Mukasa, Joseph, Lydia Olaka, and Mohammed Yahya Said. 2020. "Drought and Households' Adaptive Capacity to Water Scarcity in Kasali, Uganda." *Journal of Water and Climate Change* 1, S1: 217–32.

NECOC (National Emergency Coordination and Operations Centre). 2019. "National Risk and Vulnerability Atlas of Uganda."

New Vision. 2020. "COVID-19: Full List of Donations Released." June 29, 2020. <https://www.newvision.co.ug/news/1521706/covid-19-list-donations-released>

OECD (Organisation for Economic Co-operation and Development). 2015. *Disaster Risk Financing: A Global Survey of Practices and Challenges*. Paris: OECD Publishing. <https://www.oecd.org/daf/fin/insurance/OECD-Disaster-Risk-Financing-a-global-survey-of-practices-and-challenges.pdf>

OECD (Organisation for Economic Co-operation and Development), Development Co-operation Directorate, DAC (Development Assistance Committee). 2017. "DAC Working Party on Development Finance Statistics: Proposal to Establish a Policy Marker for Disaster Risk Reduction (DRR) in the OECD DAC Creditor Reporting System (CRS)." DCD/DAC/STAT(2017)26. December 6, 2017.

[https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DCD/DAC/STAT\(2017\)26&docLanguage=En](https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DCD/DAC/STAT(2017)26&docLanguage=En)

Okiror, Samuel. "Uganda Calls in Troops as Violence Flares between Refugees and Locals." The Guardian, September 20, 2015.

OPM (Office of the Prime Minister). 2012. The 2010–2011 Integrated Rainfall Variability Impacts, Needs Assessment and Drought Risk Management Strategy. Kampala, Uganda: OPM.

<https://www.gfdrr.org/en/publication/uganda-2010-2011-integrated-rainfall-variability-impacts-needs-assessment-and-drought>

OPM (Office of the Prime Minister). 2020. "Annual State of Disaster Report."

OPM (Office of the Prime Minister) and UNDP (United Nations Development Programme). 2021. "Overview of the DRM Plan Task Review Presentation."

Salis, Antonello. 2020. "Mapping Forest Degradation Using Remote Sensing Data in Uganda." Food and Agricultural Organisation of the United Nations. March 17, 2020.

<https://www.fao.org/redd/news/detail/fr/c/1267106/>

UBOS (Uganda Bureau of Statistics). 2009. "2009 Statistical Abstract."

<http://library.health.go.ug/sites/default/files/resources/UBOS%20Statistical%20Abstract%202009.pdf>

UBOS (Uganda Bureau of Statistics). 2021. Uganda National Household Survey 2019/20. Kampala, Uganda: UBOS.

[https://www.ubos.org/wp-content/uploads/publications/09\\_2021Uganda-National-Survey-Report-2019-2020.pdf](https://www.ubos.org/wp-content/uploads/publications/09_2021Uganda-National-Survey-Report-2019-2020.pdf)

UBOS (Uganda Bureau of Statistics) and World Bank. 2020. "COVID-19 High Frequency Phone Survey Brief-Uganda." World Bank, Washington, DC.

<http://documents.worldbank.org/curated/en/799661608033784518/COVID-19-High-Frequency-Phone-Survey-Brief-Uganda>

UN (United Nations) and World Bank. 2018. Pathways for Peace: Inclusive Approaches to Preventing Violent Conflict. Washington, DC: World Bank.

UNCDF (United Nations Capital Development Fund), MoTIC (Ministry of Trade, Industry and Cooperatives), Makerere University, and Uganda Revenue Authority. 2020. "Impact of COVID-19 on Ugandan MSMEs: Inputs to the United Nations Socio-economic Impact Assessment of COVID-19 in Uganda."

<https://www.uncdf.org/article/5634/uganda-business-impact-survey-2020>

UNDP (United Nations Development Programme). 2015. "Critical Elements for Inclusion in a New Disaster Reduction and Management Bill for the Government of Uganda."

UNDRR (United Nations Office for Disaster Risk Reduction). 2021. "After a Deadly Landslide in Climate-Hit Uganda, Survivors Sue for Action."

<https://www.preventionweb.net/news/after-deadly-landslide-climate-hit-uganda-survivors-sue-action>

UNHCR (United Nations High Commissioner for Refugees). 2018a. "Uganda Starts Biometric Verification of Refugees." March 2, 2018.

<https://www.unhcr.org/en-us/news/briefing/2018/3/5a9914ce4/uganda-starts-biometric-verification-refugees.html>

UNHCR (United Nations High Commissioner for Refugees). 2018b. "UNHCR Steps Up Support for Uganda's Refugee Programme." UNHCR News, February 20, 2018.

<http://www.unhcr.org/en-us/news/press/2018/2/5a8c00244/unhcr-steps-support-ugandas-refugee-programme.html>

UNHCR (United Nations High Commissioner for Refugees). 2022. "Inter-Agency Uganda Country Refugee Response Plan 2022–2025."

<https://data.unhcr.org/en/documents/details/92447>

USAID (United States Agency for International Development). 2014. "An Overview of Climate Change and Agriculture Infrastructure in Uganda."

[https://www.climatelinks.org/sites/default/files/asset/document/Uganda%2520CC%2520and%2520Infrastructure%2520Overview\\_CLEARED.pdf](https://www.climatelinks.org/sites/default/files/asset/document/Uganda%2520CC%2520and%2520Infrastructure%2520Overview_CLEARED.pdf)

Von Uexkull, Nina, Marco d'Errico, and Agnese Loy. 2022. "Climate, Floods and Conflict: Micro-level Evidence from Uganda." Paper presented at the 2nd International Conference on Environmental Peacebuilding (virtual), February 1–4, 2022.

World Bank. 2018. Insurance of public assets Uganda.

World Bank. 2014. Uganda Economic Update: Reducing Old Age and Economic Vulnerabilities—Why Uganda Should Improve Its Pension System 4th ed. Washington, DC: World Bank.

<https://openknowledge.worldbank.org/bitstream/handle/10986/18731/886830REVISED00c0Update004th00final.pdf?sequence=1&isAllowed=y>

World Bank. 2017. "Uganda Board Consultation Note on Eligibility for IDA 18 Regional Sub-Window for Refugees and Host Communities." Internal document. August 24, 2017.

World Bank. 2019a. Toward Scaled-up and Sustainable Agriculture Finance and Insurance in Uganda. Washington, DC: World Bank.

<https://openknowledge.worldbank.org/handle/10986/32331>

World Bank. 2019b. "Unlocking Agriculture Finance and Insurance in Uganda: The Financial Sector's Role in Agricultural Transformation." World Bank, Washington, DC.

<https://openknowledge.worldbank.org/handle/10986/32332>

World Bank. 2020. Uganda Economic Update: Strengthening Social Protection to Reduce Vulnerability and Promote Inclusive Economic Growth. 14th ed. February 2020. Washington, DC: World Bank.

<https://documents1.worldbank.org/curated/en/571011581515307951/pdf/Uganda-Economic-Update-14th-Edition-Strengthening-Social-Protection-to-Reduce-Vulnerability-and-Promote-Inclusive-Growth.pdf>

World Bank. 2021a. "Climate Risk Country Profile: Uganda."

[https://climateknowledgeportal.worldbank.org/sites/default/files/2021-05/15464-WB\\_Uganda%20Country%20Profile-WEB%20%281%29.pdf](https://climateknowledgeportal.worldbank.org/sites/default/files/2021-05/15464-WB_Uganda%20Country%20Profile-WEB%20%281%29.pdf)

World Bank. 2021b. Uganda Economic Update: From Crisis to Green Resilient Growth—Investing in Sustainable Land Management and Climate Smart Agriculture. 17th ed. World Bank, Washington, DC. June 2021.

<https://openknowledge.worldbank.org/handle/10986/35689>

World Bank. 2021c. Uganda Economic Update: Putting Women at the Center of Uganda's Economic Revival. 18th ed. December 2021. Washington, DC: World Bank.

<https://openknowledge.worldbank.org/handle/10986/36825>

World Bank. 2021d. "Uganda Overview." February 10, 2021.

World Bank. 2021e. "Implementation Completion Results Report for the Third Uganda Social Action Fund (NUSAF3)."

<https://documents1.worldbank.org/curated/en/215791642521327330/pdf/Uganda-Third-Northern-Uganda-Social-Action-Fund-Project.pdf>

World Bank and ADB (Asian Development Bank). 2017. "Assessing Financial Protection against Disasters: A Guidance Note on Conducting a Disaster Risk Finance Diagnostic."

<https://documents1.worldbank.org/curated/en/102981499799989765/pdf/117370-REVISED-PUBLIC-DRIFinanceProtectionHighRes.pdf>

World Bank Group. 2019. Boosting Financial Resilience to Disaster Shocks: Good Practices and New Frontiers. World Bank Technical Contribution to the 2019 G20 Finance Ministers' and Central Bank Governors' Meeting. Washington, DC: World Bank.

<https://openknowledge.worldbank.org/handle/10986/31887>

World Bank Treasury. 2018. "IDA Catastrophe Deferred Drawdown (Cat DDO)."

<https://thedocs.worldbank.org/en/doc/563361507314948638-0340022017/original/productnotecatddoidaenglish2018.pdf>

WFP (World Food Programme), GoU (Government of Uganda), and UNHCR (United Nations High Commissioner for Refugees). 2018. "Analysis of Refugee Vulnerability in Uganda and Recommendations for Improved Targeting of Food Assistance."

## ANNEX A. DISASTER RISK FINANCE INSTRUMENTS USED IN UGANDA

Instrument	Description	Status (as of September 2021)	Hazards covered	Maximum annual value	Coverage (geographical /population)	Administrator
<b>BUDGET MECHANISMS</b>						
<b>OPM budget for disaster response</b>		Operational	All shocks	Varies. 2007: US\$4.6 million (UGX 17 billion)  2021: US\$19.4 million (UGX 71.1 billion)	National	
<b>RESERVE FUNDS</b>						
<b>Contingency fund</b>	0.5% of government expenditure	Active since 2018	All shocks	2021: UGX 181.34 billion	National	MoFPED
<b>Central storage facility for emergency relief items</b>		Unknown				OPM
<b>HUMANITARIAN ASSISTANCE</b>						
<b>UN Central Emergency Response Fund (CERF)<sup>a</sup></b>	Ex post assistance for emergency relief and recovery through UN agencies  Disbursed (ideally) within 48 hours  Must be spent within six months of allocation	Ad hoc	Sudden-onset emergencies, human displacement	Up to US\$30 million (UGX 107 billion) <sup>b</sup>  2015: US\$3.2 million (UGX 11.4 billion)	National	OPM, International Federation of Red Cross and Red Crescent Societies, UN CERF, UN agencies

<b>Instrument</b>	<b>Description</b>	<b>Status (as of September 2021)</b>	<b>Hazards covered</b>	<b>Maximum annual value</b>	<b>Coverage (geographical /population)</b>	<b>Administrator</b>
<b>Disaster Relief Emergency Fund (DREF)</b>	Ex post assistance for emergency relief and recovery through International Federation of Red Cross and Red Crescent Societies  Disbursed (ideally) within 72 hours	Ad hoc	All	Up to CHF 1 million (UGX 3.7 billion) per year		
<b>DELIVERY MECHANISMS (DISASTER RESPONSE PROGRAMS)</b>						
<b>Uganda Agriculture Insurance Scheme</b>	Subsidized index insurance	Active	Drought, excessive rainfall, hail			
<b>Northern Uganda Social Action Fund (NUSAF)</b>	Adaptive social protection-labor intensive works program with a scalability mechanism	Closed	Drought	US\$12 million (UGX 45.7 billion)	Northern Uganda	MoFPED, OPM, World Bank

Note: MoFPED = Ministry of Finance, Planning and Economic Development; OPM = Office of the Prime Minister.

a. The UN Central Emergency Response Fund–Rapid Response Window is also available to other countries.

b. Maximum annual value depends on the nature of the shock.

c. Loans and grants are also available to other countries.

## ANNEX B. EXAMPLES OF DRF INSTRUMENTS IN OTHER COUNTRIES

### Example 1: Sovereign insurance in Sahel countries

The Sahel's generally dry climate and low and irregular rainfall can have a significant economic impact on countries in the region. The Sahel experiences repeated drought cycles with the consequent degradation of its natural resources, and this pattern has a profound effect on the revenue sources of the population. Poor rainfall in the Sahel in 2018 sparked acute pasture and water shortages, raised food costs, and caused livestock prices to fall, leaving almost 6 million people in need of food and livelihoods assistance across Burkina Faso, Chad, Mali, Mauritania, Niger, and Senegal. Responding to droughts in the Sahel can require substantial resources. During the 2018 drought, for example, the UN launched a humanitarian appeal for US\$1.37 billion. However, only 26% of the appeal had been funded by June 2018.

#### **To manage the risk from drought, governments in Sahel countries have purchased drought insurance from the African Risk Capacity (ARC).**

Governments can customize the drought insurance policy according to their needs by choosing the levels of risk retention and risk transfer, as well as other parameters. To support a quick response to disasters, ARC provides technical assistance to governments for developing contingency plans—that is, the activities that potential insurance payouts could fund. Since 2014, four Sahel governments—Mali, Senegal, Mauritania, and Niger—have purchased drought insurance from ARC.

**In 2015, Mauritania, Niger, and Senegal received payouts that provided the liquidity their governments needed to respond to a severe drought.** These countries had purchased insurance and paid an annual premium that amounted to US\$8 million for the three of them. A payout from ARC to the three countries totaling

US\$26 million was triggered by the drought. ARC's payout to the governments of Mauritania, Niger, and Senegal arrived earlier than food security contributions by other donors. These funds were then used by the governments to deliver relief to the affected population. They covered the costs of food distribution in the three countries, cattle feed support in Senegal and Mauritania, and conditional cash transfers in Niger. The relief activities benefited an estimated 1.3 million people. In Mauritania, the early support prevented drought-affected households from engaging in negative coping strategies such as migrating, reducing the number of meals per day, and engaging in distress sale of livestock, all of which could have had a long-term impact on their future income.

**An important lesson from the ARC payout in 2015 is that establishing ways to channel resources to beneficiaries is as important as mobilizing these resources; both are needed to ensure a timely response to a disaster.** In the case of Senegal and Niger, activities were delayed when funds were blocked in the National Treasury, either because the government lacked the financial systems required to receive funding from ARC, the procurement of food was inefficient, or the distribution of food and cash to affected households was poorly organized.

**Sahel countries complement insurance with other disaster risk financing and budget execution instruments.** The Government of Senegal, for example, complements sovereign insurance by subsidizing agricultural insurance at a micro level so that farmers can transfer risks to the private sector. The Government of Senegal is also developing a DRF strategy that includes establishment of different instruments to enhance its financial resilience to natural disasters. In addition to mobilizing resources, some countries in the Sahel are strengthening budget execution in case of disasters by developing adaptive social protection systems that can expand to provide support to affected households when disasters strike. This is the case in Niger and Senegal.



## Example 2: Mozambique's Disaster Management Fund

**Mozambique is heavily exposed to multiple natural hazards, especially floods, cyclones, droughts, and earthquakes.** The annual average damage caused by natural disasters between 2000 and 2014 was estimated to cost US\$188.3 million. The negative impact of climate and disaster shocks is exacerbated by Mozambique's high level of poverty; in 2014 62.9% of the population was poor according to the US\$1.9/day (2011 purchasing power parity) poverty line.

**Recognizing the magnitude of climate and disaster risks, the Government of Mozambique (GoM) has taken various steps to increase financial protection against disasters.** Until recently, an annual contingency budget allocation of around US\$2 million was the only ex ante financial instrument for disaster preparedness and response. The limited size of this allocation allowed the GoM to respond to small to medium-size events only. Moreover, the amounts allocated each year were not predictable. For the financing of emergency response to larger events and post-disaster recovery and reconstruction, the GoM had been relying on ex post instruments, such as ad hoc budget reallocations, or donations or loans from the donor community, which are usually slow to materialize and remain insufficient to cover post-disaster recovery needs.

**GoM approved the creation of a national Disaster Management Fund (Fundo de Gestão de Calamidades, DMF) in October 2017.** The DMF is a dedicated account managed by the National Institute of Disaster Management (INGC). The DMF is expected to receive annual budget allocations of at least 0.1% of the state budget (a minimum annual allocation of about US\$4.5–5 million). The World Bank has topped up the DMF allocation with an additional annual amount of US\$9 million in the fund's first two years and with an additional annual US\$5 million in the following three years. The Funds was set up to increase the availability and predictability of resources for emergency preparedness and response and make room for financing recovery.

**With technical assistance from the World Bank, the GoM has elaborated and adopted regulations to govern the DMF.** The DMF only finances immediate disaster preparedness and response activities. This support is provided in kind and is procured through pre-agreed contracts to speed up response to disasters. The DMF has been designed so that it can purchase a sovereign parametric catastrophe insurance product, which could provide an important backstop to the fund in the event of a large disaster. The regulations also specify, among other things, the mechanism for triggering the use of DMF resources; the rules for requesting resources from the DMF; requirements to pre-negotiated contracts for the delivery of specified goods; requirements for auditing the use of funds and transparency; and the concentration of fiduciary responsibility for the DMF at INGC.

**The GoM is complementing the consolidation of financial protection against disasters through other interventions,** including the following: (i) improving the understanding of risk by acquiring and processing high-resolution spatial and topographic data to improve risk maps for all major perils at the national level; (ii) strengthening capacity for disaster preparedness and response by creating, equipping, and training a network of DRM committees at local level and strengthening early warning systems for cyclone and river flooding; and (iii) mainstreaming DRM in public investments and territorial planning by approving a decree requiring that new public buildings comply with resilient design standards and environmental requirements.

## Example 3: Bank's Catastrophe Deferred Drawdown Option (Cat DDO)

- The Cat DDO was developed in 2008 as the World Bank Development Policy Loan with a Catastrophe Deferred Drawdown Option for IBRD (International Bank for Reconstruction and Development) countries.
- Funds become available upon declaration of a state of emergency in the borrower's territory as a result of a natural disaster.

- The Cat DDO funds act as a fiscal buffer that reduces disaster impact; it is available immediately after a disaster and acts as critical bridge financing until other domestic funds can be reallocated or international aid is received.
- Cat DDOs can be used to back up existing insurance pools.
- Cat DDOs also incentivize proactive actions to reduce risk: to be eligible, governments must demonstrate capacity to manage natural risks.
- Under IDA 18, IDA countries became eligible for Cat DDOs.<sup>32</sup>
- By June 2022, the World Bank had approved 40 Cat DDOs for a total value of \$5.17billion. Cat

DDOs have been shown to be effective liquidity instruments, providing countries with needed cash in the immediate aftermath of a disaster.

Now that IDA countries are eligible for Cat DDOs, the World Bank is seeing rapidly growing interest in these development policy operations. In June 2018, the first IDA Cat DDO of US\$200 million was approved by the World Bank Board of Directors for Kenya, the first IDA country in Africa to develop a national DRF strategy. As of June 2021, a further four Cat DDOs had been approved in Africa (Cabo Verde, Malawi, Madagascar, Seychelles) with an a new Cat DDO under preparation in Cabo Verde.

## Box 2: Kenya Cat DDO

**Precondition to access a Cat DDO:** Government of Kenya demonstrated (i) an adequate macroeconomic policy framework; and (ii) notable advances in strengthening the country's DRM program.

**Definition of disaster:** Disaster is defined as an imminent or occurring serious disruption of the functioning of a community causing economic or environmental losses that exceed the ability of the recipient to cope using its own resources.

**Disbursement:** The Cat DDO is triggered if a predefined trigger linked to a disaster has been met. In the case of Kenya, this is either through (i) an emergency order or declaration under applicable law; or (ii) a decree or order mobilizing financial or other resources to respond to the impact of a natural hazard or health emergency causing widespread human or material harm. The first disbursement of US\$70 million was made in December 2019 in response to floods. The balance of US\$130 million was disbursed in April 2020 in response to COVID-19.

**Lessons learned:** (i) The DRM bill was critical to meeting the prerequisite conditions from IDA; (ii) the national DRF strategy provided the government with comprehensive financial protection against shocks, (iii) the flexibility of the Cat DDO rapidly provided much-needed liquidity; and (iv) there is a need for a mix of hard and soft triggers.

32. See World Bank Treasury (2018) for limits, terms, and conditions.

## ANNEX C. SOCIAL UNREST AND DISPLACEMENT SHOCKS

**While Uganda enjoys relative political stability compared to its neighbors, it is subject to compounding factors of multidimensional social risk.** Social groups' grievances surrounding exclusion from resources and services are compounded by Uganda's environmental and economic vulnerabilities as well as limited fiscal capacity; the latter is in turn compounded by high security sector budgetary commitments (UN and World Bank 2018; World Bank 2021b). In 2021, the Fragile States Index scored Uganda's fragility as 92.9, making Uganda the 24th most fragile country in the world and among the third most fragile category of fragility.<sup>33</sup> Nearly 70% of Ugandans

### Social unrest

**Levels of social unrest have been increasing and have had an impact on countries' GDPs (Hadzi-Vaskov, Pienknagura, and Ricci 2021).** Costs of social unrest are difficult to quantify. However, a recent global study of 89 countries found that GDP remains on average 0.2 percentage points below pre-unrest levels for six quarters, with the impact predominantly experienced via manufacturing, services, and consumption. The impact increases to 1% after significant unrest events (Hadzi-Vaskov, Pienknagura, and Ricci 2021).<sup>34</sup> From April 26 to May 2, 2020, a period following the WHO's declaration of a global pandemic (on March 11, 2020), Uganda experienced its highest levels of social unrest in 15 years (ACLEd 2020). The number of riots rose from around 80 in May 2020 to around 110 by the third quarter of 2021.<sup>35</sup> Social group-specific grievances around access to public services, land, justice, and security are commonly associated with increased risk of violence (UN and World Bank 2018). Recent work shows that these

stressors are heightened during shocks, such as a natural disaster or significant economic adjustment (Besley, Collier, and Khan 2018). Stressors are further compounded by an expanding population (Uganda's population is the seventh fastest growing globally) and environmental degradation, which create competition for increasingly scarce resources. Determining the risk of social unrest requires forecasting and identifying factors most associated with change in both real and perceived exclusion of social groups. The compounding and endogenous nature of social phenomena makes these phenomena difficult to consistently measure. However, emerging techniques leveraging artificial intelligence and data science are being used to meet the challenge of forecasting and explaining social phenomena; see box 3 below for more information.

### Displacement shocks

**Uganda continues to experience significant displacement shocks, which are estimated to cost US\$1.2 billion per year.** Uganda hosts the third-largest number of refugees globally (the highest in Africa) (UNHCR 2018b). There are currently 1.4 million refugees living in Uganda and a monthly inflow of roughly 30,000 new refugees, primarily from South Sudan (61.8%) and the Democratic Republic of Congo (29.1%). Uganda has an "open door" refugee policy, aimed at integrating refugees within host communities. Refugees are concentrated in 12 districts of the country (Margini et al. 2020). In 2018/19, the World Food Programme spent UGX 616 billion on general food distribution, and the United Nations High Commissioner for Refugees (UNHCR) spent UGX 685 billion in support of refugees and host communities.

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33. Fragile States Index, "Country Dashboard," <https://fragilestatesindex.org/country-data/>

34. The study considered 57 emerging market and low-income countries and 32 advanced economies.

35. ACLED, CDT Spotlight: State Force in Uganda, <https://acleddata.com/2020/05/07/cdt-spotlight-state-force-in-uganda/>

**Uganda’s risk of further displacement shocks remains high due to existing levels of fragility in the Great Lakes and Horn of Africa regions.**

Uganda’s risk emanates particularly from South Sudan, Somalia, and the Democratic Republic of Congo, which score over 108 on the Fund for Peace’s Fragile States Index (table 7).<sup>36</sup> The Fund for Peace’s Fragile States Index is unverified in terms of predictive accuracy. The index can be complemented by emerging social science-

informed predictive techniques. For example, the World Bank is leveraging artificial intelligence methods to forecast change in population, using monthly change in all built structures as a proxy for population change. Such an approach would enable earlier action in response to displacement shocks, provide evidence on priority activities to minimize the impact of displacement on the poor and vulnerable, and optimize development impact.

**TABLE 7: FRAGILE STATES INDEX FOR SELECTED GREAT LAKES AND HORN OF AFRICA COUNTRIES**

Country	Fragile States Index value	Situation outlook
South Sudan	109	Improving (4 <sup>th</sup> most fragile in the world)
Somalia	111	Worsening (2 <sup>nd</sup> most fragile)
Congo, Dem. Rep.	108	Improving (5 <sup>th</sup> most fragile)
Burundi	97	Improving (16 <sup>th</sup> most fragile)
Uganda	93	Worsening (24 <sup>th</sup> most fragile)
Horn of Africa average	98.3	Improving

Source: Haken and Fiertz 2018, 30–41; fragile states index values are from Fragile States Index, “Country Dashboard,” <https://fragilestatesindex.org/country-data/>

**Increasingly, scarce resources and an expanding population compound other grievances.**

Social tension is exaggerated by competition for increasingly scarce resources. Environmental degradation, demographic expansion, and increasingly numerous and severe climate-related natural disasters also exaggerate grievances, particularly around scarce resources like firewood and grazable land.<sup>37</sup> Public sector inefficiency, public distrust, and poor resource distribution emanating from low institutional capacity are major drivers of social unrest in Uganda. The World Bank’s

most recent World Governance Indicators data showed that the country annually loses US\$286 million to corruption.<sup>38</sup> High levels of corruption, combined with low capacity of key systems and institutions, lead to poor functionality in the public health, education, and finance distribution sectors and make services in these sectors hard to access, particularly for historically marginalized social groups. The impact is more severe where unrest is driven by socioeconomic grievances alone or a combination of both socioeconomic and political power-related grievances.

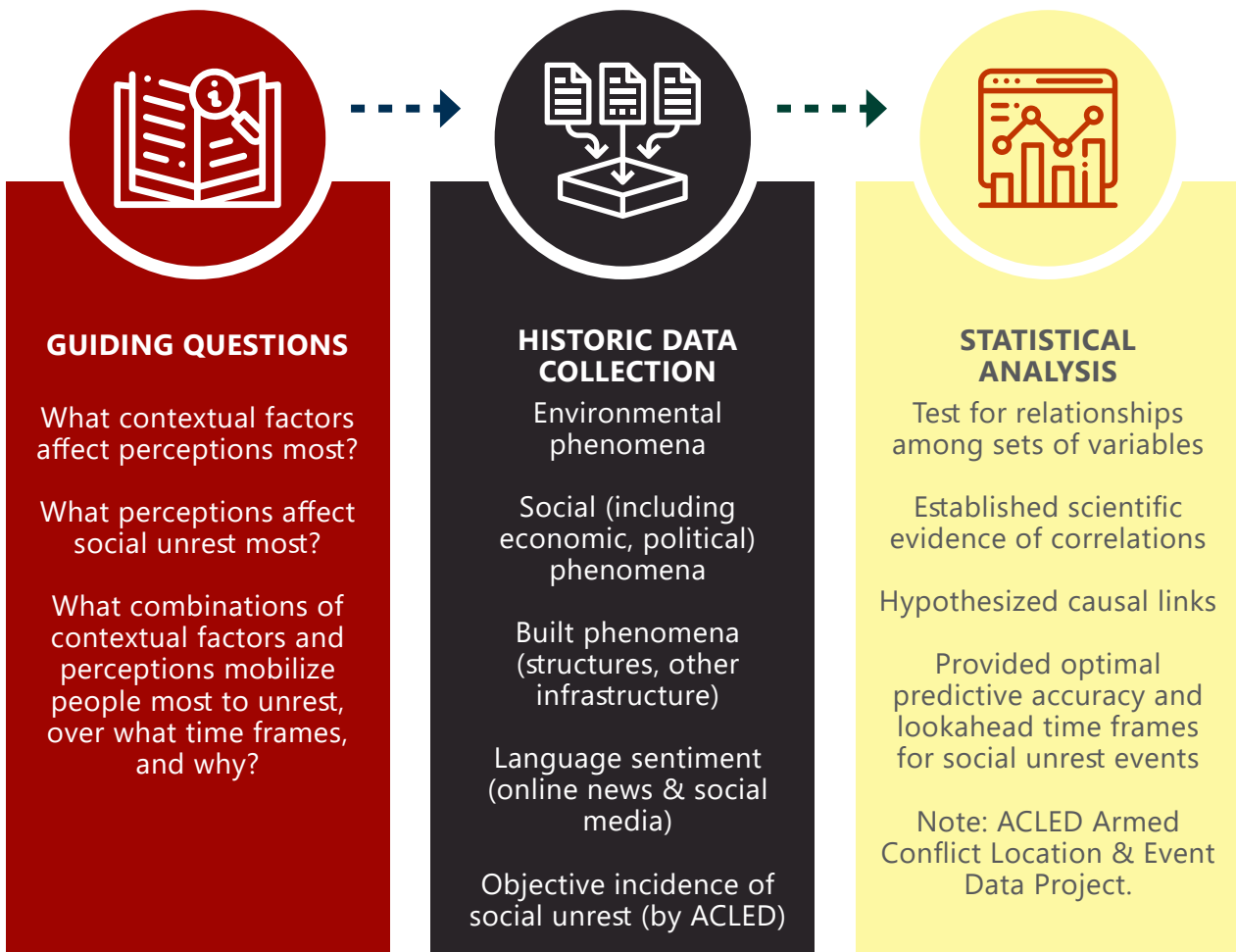
36. Fragile States Index, “Country Dashboard,” <https://fragilestatesindex.org/country-data/>

37. Flooding events, which degradation renders more likely, are associated with higher support for violence in the flood-prone region of Karamoja. Tensions are also exaggerated by the increased number and severity of drought, flooding, and landslide events (Biryabarema 2020; Kyatengerwa, Kim, and Choi 2020; Mukasa, Olaka, and Said 2020; Okiror 2015; Salis 2020; Von Uexkull, d’Errico, and Loy 2022; World Bank 2021b).

38. World Bank, World Governance Indicators, <https://info.worldbank.org/governance/wgi/>

### Box 3: Social science–informed AI modeling of social phenomena

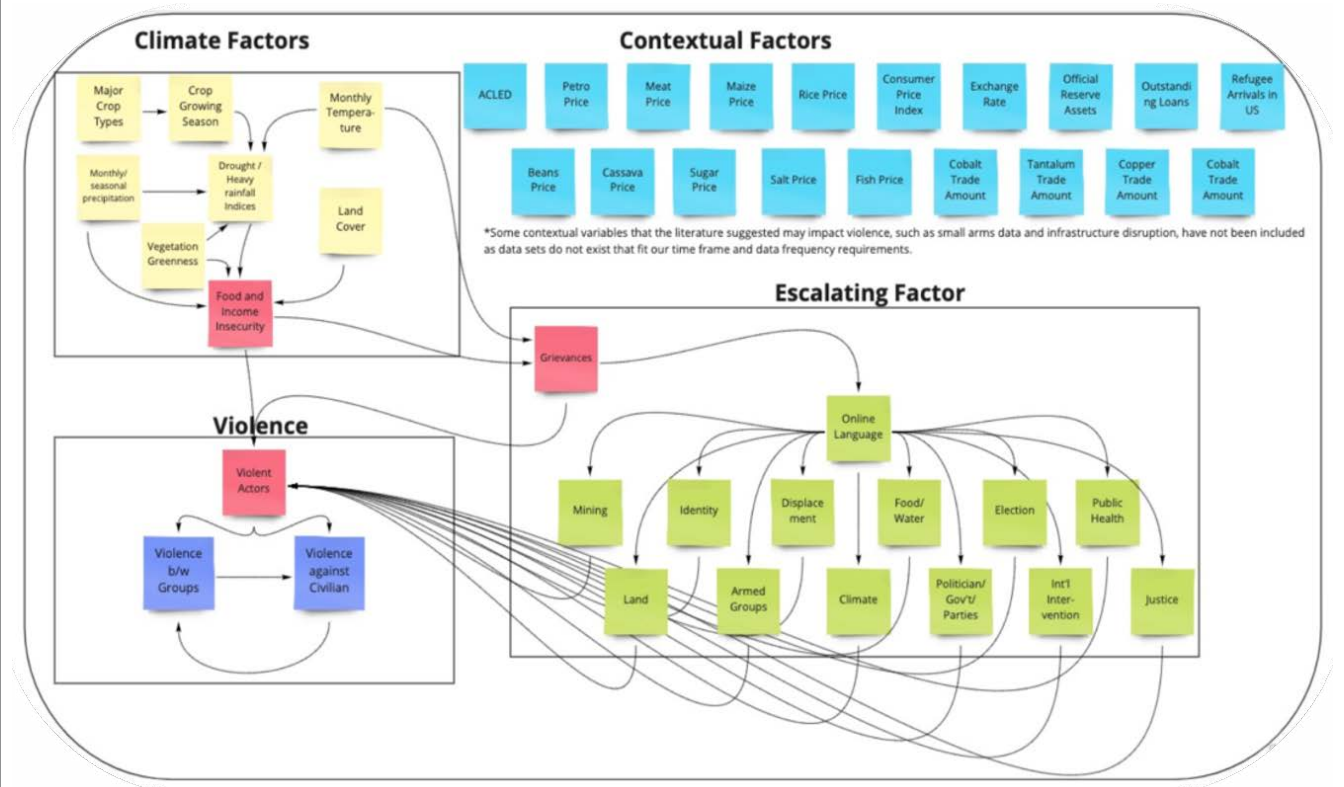
The World Bank is fostering social science–informed approaches to data science that leverage emerging technology and data on social phenomena to reduce knowledge gaps on the multidimensionality of social risk. Online news and social media language metadata, alongside economic, climate, event, imagery, and other data sources, enable multiple artificial intelligence methods to enhance forecasting and understanding of social phenomena, including social unrest and violence.



Note: ACLED = Armed Conflict Location & Event Data Project.

**In eastern Democratic Republic of Congo, a conflict risk modeling exercise based on** online language sentiment data was ingested into machine learning algorithms alongside commodity prices, precipitation, and GIS and satellite-generated imagery representing spatial phenomena like crop type down to 5 m<sup>2</sup>. For three conflict levels—significant increase, similar level, or significant decrease—the expected accuracy was around 33%; instead, despite COVID-19-related data anomalies, the model achieved 76% accuracy for Ituri, 63% accuracy for North Kivu, and 69% accuracy for South Kivu. 25 The factors most associated with enhanced model accuracy included official reserves, transnational trade, consumer price index, sentiment about “justice,” and existence of standing pools of water in built environments (towns and villages). Language sentiment about topics relating to politicians and political parties was more helpful than that relating to topics such as mining, minerals, food, water, or elections.

FIGURE 45: DATA REPRESENTING INTERCONNECTED REAL AND PERCEIVED PHENOMENA INGESTED INTO THE DEMOCRATIC REPUBLIC OF CONGO MODEL



Source: Mahony, Maher, and Calcutt, forthcoming.

a. Such combinations of data science methods may include natural language processing and machine learning. A recently developed model for Kenya, using only influential actors' Twitter language in English, achieved 84.5% accuracy in forecasting change in violence. See Mahony, Albrecht, and Sensoy (2019); Meng and Srihari (2019).

**To objectively assess the risk of future displacement shocks, context-specific considerations may be accompanied by consistent metrics that consider environmental, political, social, and economic specificities of each country.** This assessment approach may therefore accompany a qualitative consideration of the historical and contemporaneous dynamics in each country over and above more orthodox metrics like the Fragile States Index.

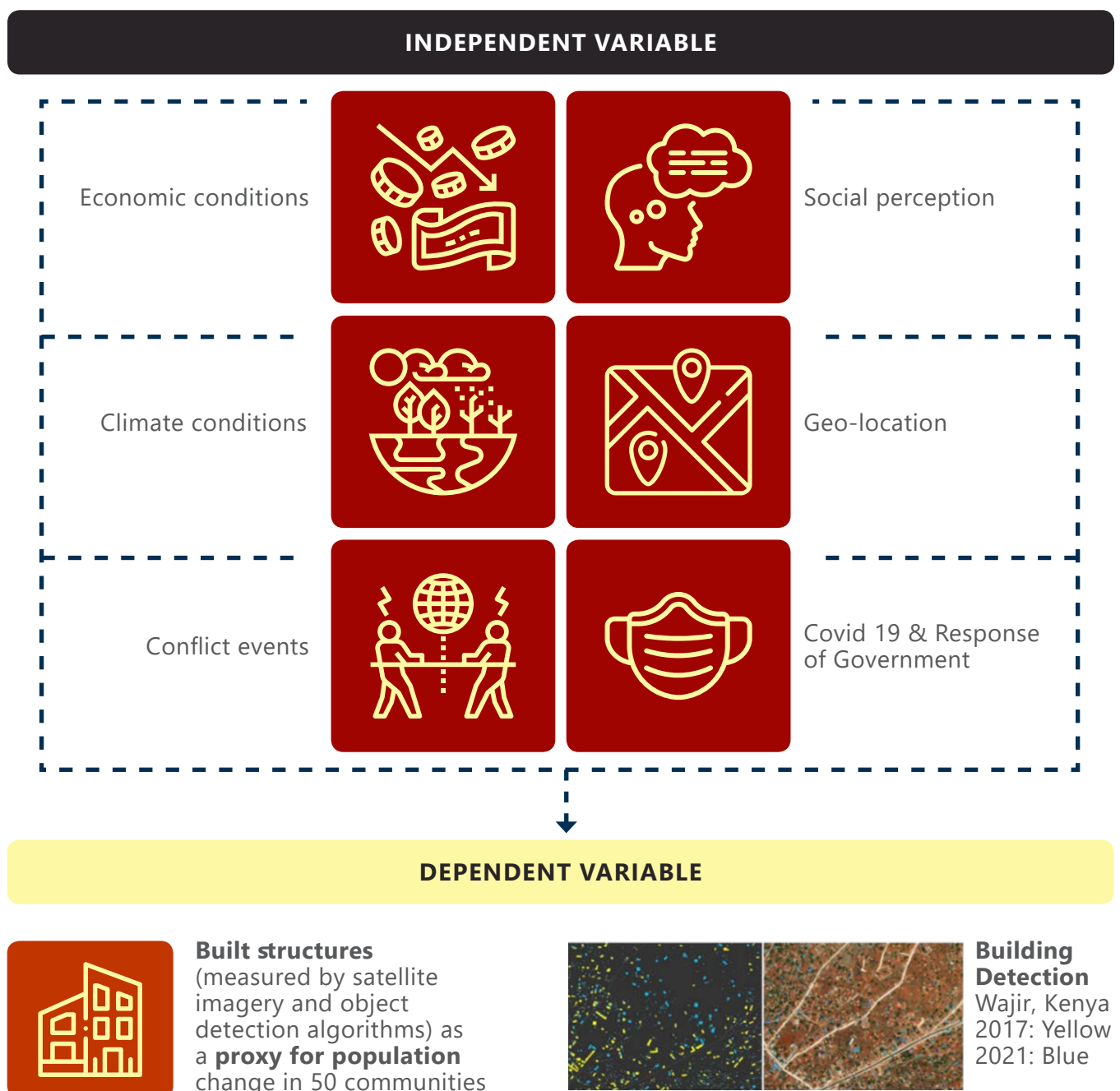
**Unlike an unverified index, the World Bank's model of violence in the Democratic Republic of Congo might be adjusted to forecast the monthly number of UNHCR-registered refugees entering Uganda.** Such an approach would be significantly more robust than adopting an index

that is effectively untested in terms of predictive accuracy. Similarly, changes in the number of built structures detected by satellite imagery might be tested and used as a proxy for population change to observe the number of persons at or near the border, or the number of persons in Ugandan districts. Change in the number of built structures might then also be predicted, and the factors most associated with change in built structures or registered refugees identified. This approach would not only enable earlier action to respond to displacement shocks, but also provide enhanced evidence as to what activities should be prioritized to optimize development impact.

**Indeed, the World Bank is already leveraging artificial intelligence methods to forecast change in population, using monthly change in built structures as a proxy for population change.** In the borderlands of the Horn of Africa, the World Bank is developing and employing object recognition machine learning algorithms and applying them to monthly satellite imagery to produce data representing change in built structures in human settlements. The team then uses deep learning models to forecast change in

the volume of land covered by built structures from month to month. Like the Democratic Republic of Congo model, this model ingests online language sentiment data from news and social media (in English, Arabic, Somali, and Swahili) alongside commodity prices, precipitation data, and GIS and satellite-generated imagery data representing spatial phenomena. It also ingests data representing the COVID-19 pandemic and government policy responses.

FIGURE 46: AN AI-DRIVEN MODEL OF HORN OF AFRICA BUILT STRUCTURE CHANGE AS A PROXY FOR POPULATION CHANGE



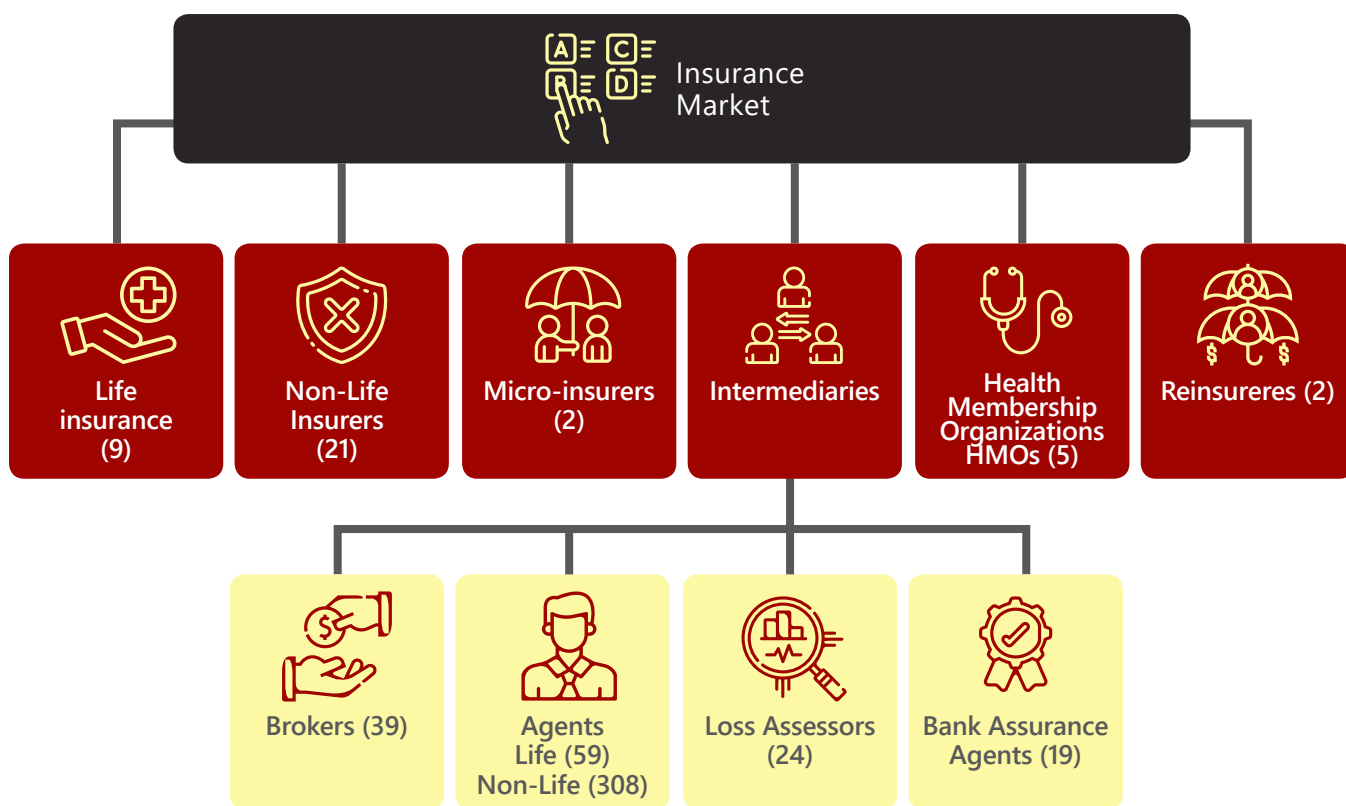
Source: World Bank

## ANNEX D. NON-LIFE INSURANCE MARKET

The Uganda insurance market is relatively young. Although the first local insurance company was established in 1948, the insurance industry was restarted in 1991 following the Ugandan Civil War. The first local reinsurer was licensed in 2013 and the first micro-insurer in 2018. There has been strong growth in the number of bank assurance agents, from 2 in 2017 to 16 in 2019, while the numbers of insurers, brokers, and loss assessors

have been stable over the last five years. There is no state-owned insurance or reinsurance company in Uganda. Most insurers have at least partial foreign ownership; South African and Kenyan integrated financial services groups are the dominant foreign owners. The Government of Uganda is a member of the African Trade Insurance Agency (ATI), which launched its office in Kampala in 2009 and offers political risk, credit risk, and export credit insurance products. The composition of the insurance market is shown in figure 50.

FIGURE 47: COMPOSITION OF THE UGANDAN INSURANCE MARKET, 2020



Source: World Bank

Insurance legislation has been undergoing modernization and strengthening since 2011. The industry is transitioning to a risk-based capital regime and regulatory framework (figure 51). Regulations aimed at enhancing growth and policyholder protection are under preparation, including regulations for an insurance appeals tribunal, a policyholder compensation fund, index insurance, and mobile insurance. Insurance against catastrophe or natural disasters is not mandatory.

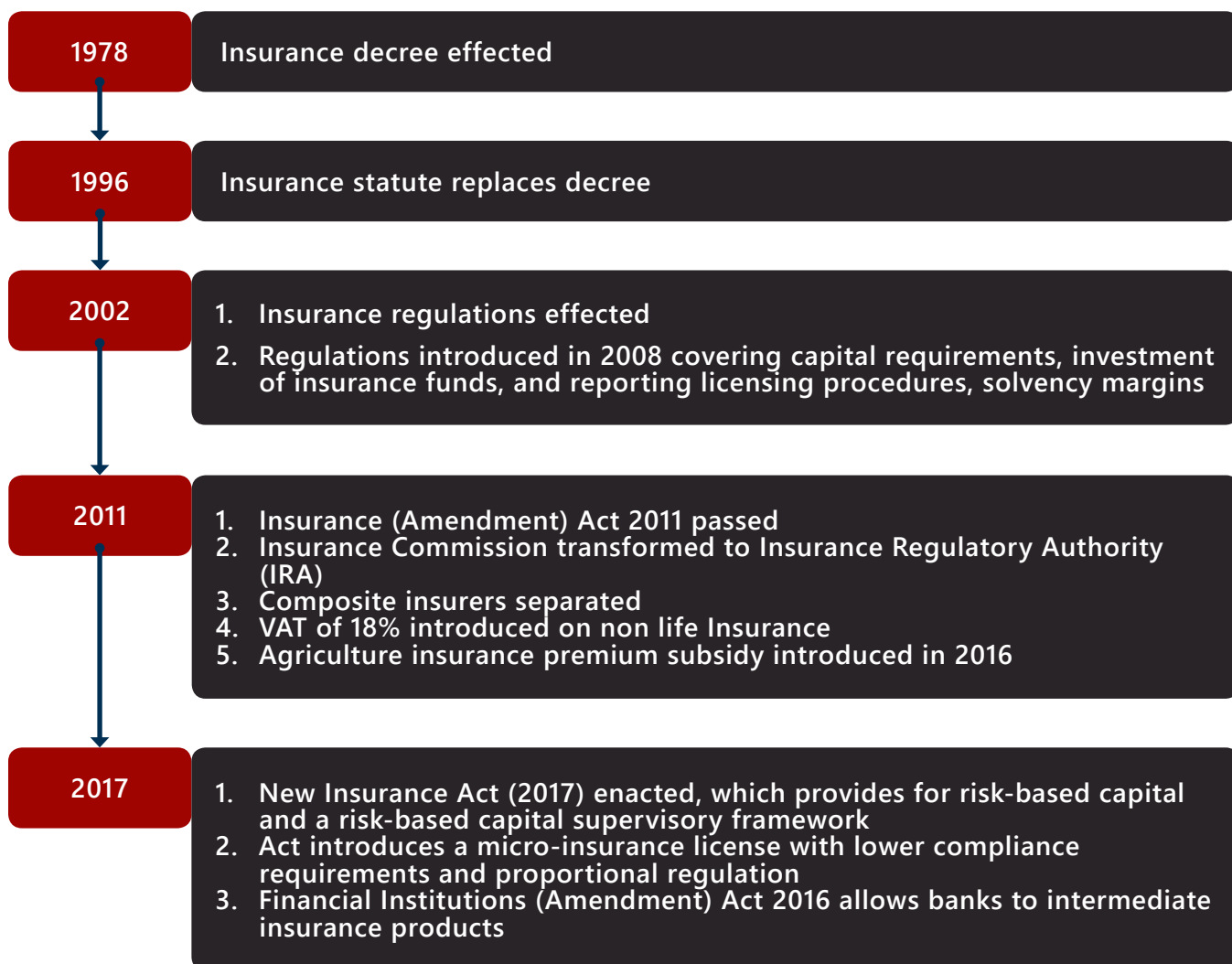
**Risk management is underdeveloped but expected to expand as the new insurance law becomes fully operational.** Many insurers do not have surveyors, and the in-house risk management and surveying facilities available to some of the major insurers is largely inadequate. Section 81 (2) of the old legislation prohibited brokers from carrying out risk inspections, but Section 83 (2) of the new law allows an insurance or a reinsurance broker to assess and advise on insurable risks.



Minimal risk management services are offered by a small number of brokers, and at least one major broker offers a comprehensive risk management service. All of these may be expected to expand as the new law becomes fully operational. Very

few insured companies have dedicated insurance managers, and even fewer have risk managers. The regulator could work with the locally available risk management consultants to facilitate development of a risk managers' association.

FIGURE 48: KEY REGULATORY DEVELOPMENTS IN THE UGANDAN INSURANCE INDUSTRY



Source: IRA.  
Note: VAT = value added tax.

**The non-life insurance market is stable with a growing asset base and stable claims ratio. However, the underwriting margin is thin.** Sustained growth in net assets (UGX 443.8 billion in 2019) indicates capacity of the industry to absorb more risks and provide adequate protection to the insuring public. The total expense ratio (68%) is higher than in other Sub-Saharan African markets such as South Africa (30%) and Kenya

(45%), and it is driven by management expenses, which undermine profitability. Despite a positive underwriting margin at industry level, more than half of non-life insurers in the market have a combined ratio at over 100%, which points to technical losses, likely due to lack of economies of scale. In 2018, most insurers had net profit of less than UGX 2 billion each, with Return on Equity of less than 4%.<sup>39</sup> See table 8 for further details.

39. Net profit refers to overall business results, including investment profit and underwriting profit.

TABLE 8: PROFIT AND EFFICIENCY RATIOS OF THE NON-LIFE INSURANCE MARKET

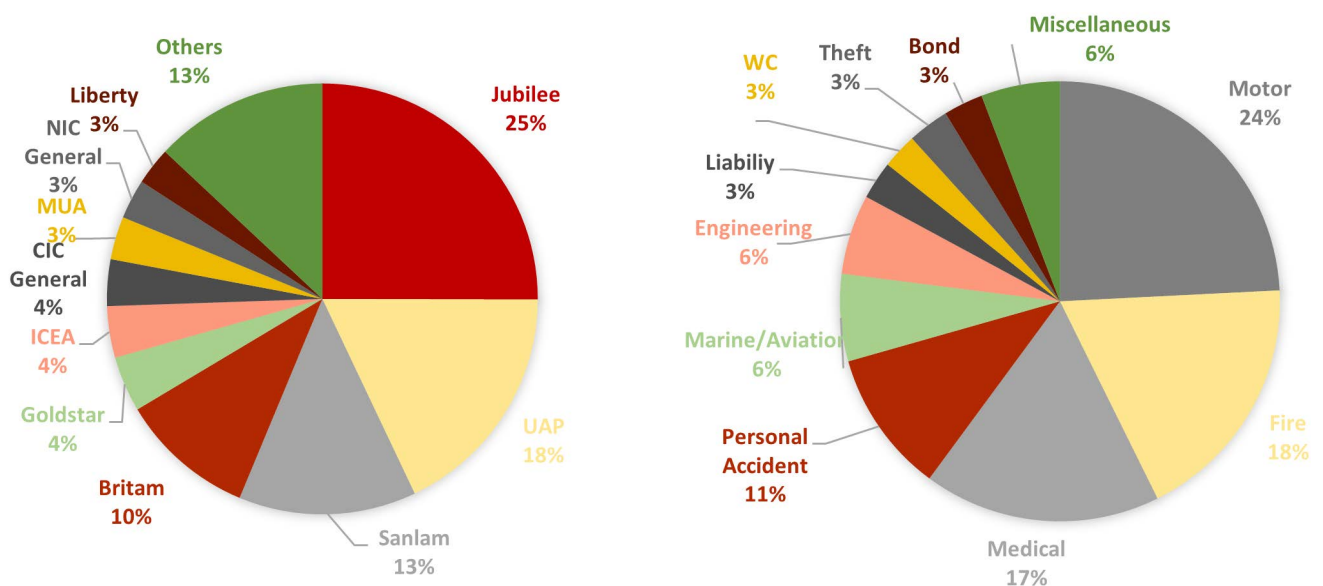
Ratio	2014	2015	2016	2017	2018	2019
Net asset growth	25%	12%	-1%	11%	4%	11%
Retention	58%	53%	59%	59%	55%	55%
Claim	40%	45%	41%	45%	40%	43%
Management expense	48%	48%		53%	49%	47%
Net commission	-	-	-	-	4%	21%
Underwriting margin	12%	3%	5%	1%	6%	-11%

Source: Axco, IRA.

**The non-life insurance market is competitive and offers a diversified mix of products.** The three largest insurers account for just over 50% of premiums, while several top-10 insurers write less than 5% each. Product mix has diversified over the years, with the proportion of motor insurance

continually dropping from 39% in 1998. This is consistent with insurance market development; motor insurance becomes a smaller proportion as insurers become adept at developing and delivering different products.

FIGURE 49: MARKET SHARES OF INSURANCE COMPANIES (LEFT) AND PRODUCT MIX (RIGHT), 2019



Source: IRA 2019.

Note: The figures represent shares of gross written premium by insurers and by type of product. WC = workmen's compensation.

### Box 4: Sasria: South Africa’s market-based approach to social risk

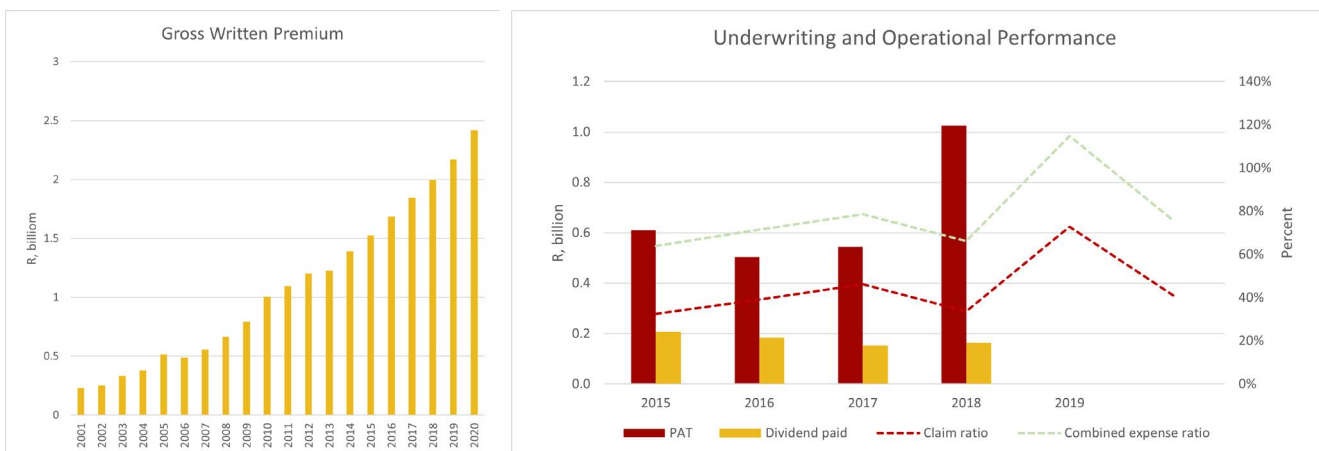
In South Africa, insurance for social unrest-related risks is offered by the state-owned insurer Sasria. Sasria is the only insurer authorized to offer cover for special risks, namely civil commotion, public disorder, strikes, riots, lockout, rebellion and revolution, and terrorism.

**The criticality of Sasria is evident in the economic costs of social unrest experienced by South Africa.** Despite being among the five top global improvers in successfully reducing violence in 2020, the cost of violence to South Africa—around 13% of GDP, or US\$2,533 per person—is notably high. Violent incidents drive property damage, physical injury, and psychological trauma that shapes economic behavior, including investment patterns, consumption patterns, and labor productivity. A recent survey found that 53% of South Africans from high-risk locations were mentally impacted, while 81% were late for work and 72% missed work altogether due to violence or crime.

**South Africa has one of the highest rates of public protests worldwide, with a rising incidence of student protests, service delivery protests, and xenophobic outbreaks, collectively referred to as social violence.** The Fees Must Fall movement (focused on student fees) resulted in property damage of R 600 million between March 2015 and September 2016. Between 2008 and 2020, more than 2 million people have taken to the streets in service delivery protests every year.

**Despite increases in social unrest and significant costs, Sasria’s fiscal position continues to strengthen with gross written premium reaching R 2.2 billion, while assets and equity reached R 8.5 billion and R 6.6 respectively in 2019 (see figure 50).** The cost of violence to South Africa is estimated at US\$45.6 billion, or 13% of GDP, and is expected to increase given that the risk of social violence is compounded by other factors affecting South Africa such as climate change and urbanization.

FIGURE 50: SASRIA GROSS WRITTEN PREMIUM (LEFT) AND UNDERWRITING AND OPERATION PERFORMANCE (RIGHT)



Source: World Bank staff. Note: PAT = Profit After Tax.

**The difficulty of forecasting social phenomena renders Sasria vulnerable to shocks. However, artificial intelligence may present an opportunity to introduce a state-led risk financing approach to social resilience.** Like Sasria, the Government of Uganda has a significant need to understand social phenomena that drive social unrest in light of Uganda's exposure to this risk. The availability of more voluminous data sources on social phenomena could inform development of models to forecast and identify factors associated with social unrest, as were developed in eastern Democratic Republic of Congo.



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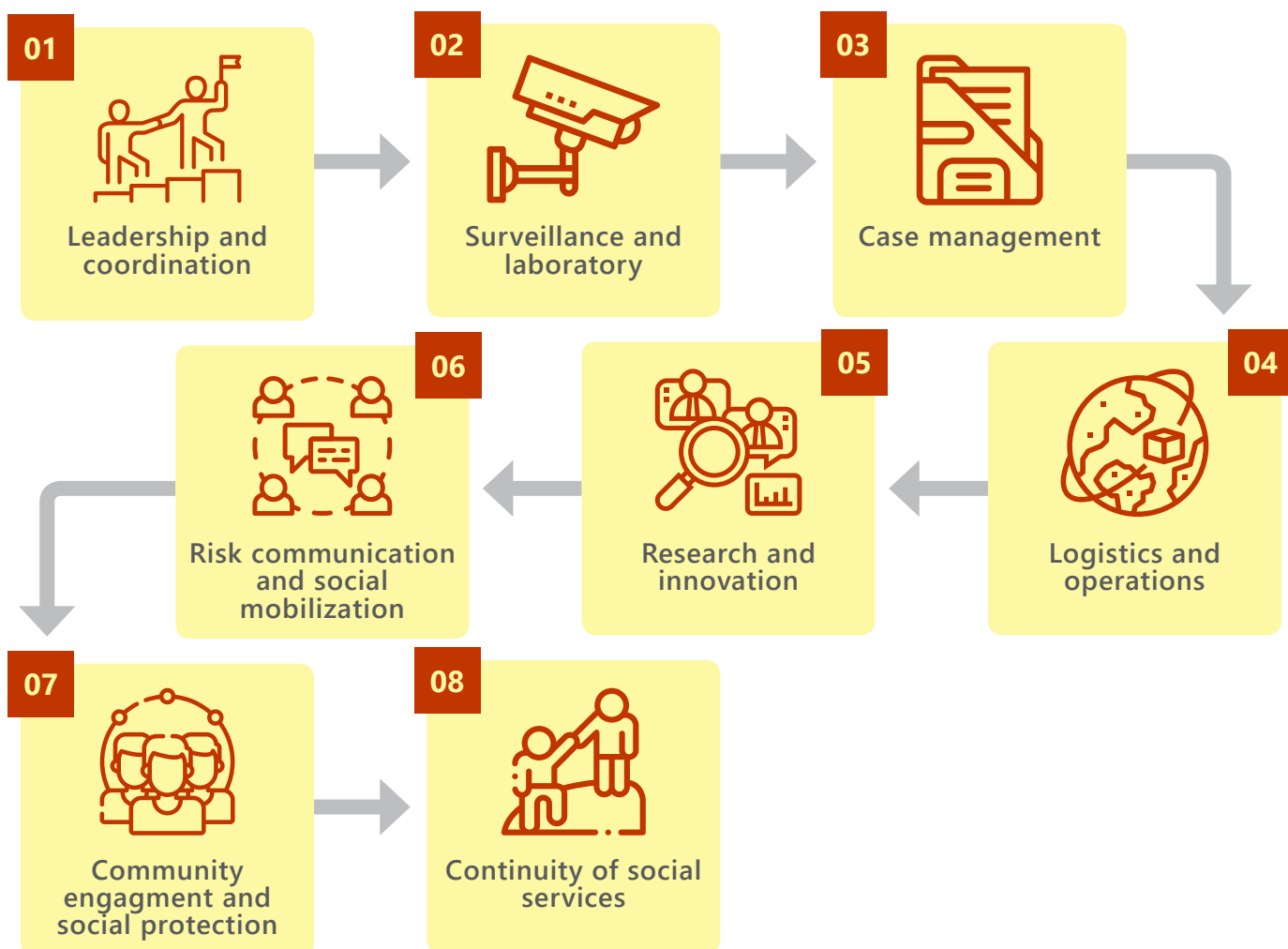
## ANNEX E. ADDITIONAL INFORMATION ON THE COVID-19 CASE STUDY

Over the last few decades, the GoU has transformed its response strategy to public health emergencies; for example, it has set up a Public Health Emergency Operations Centre (PHEOC) for central coordination of information on health emergencies and natural disasters. The 1995 Constitution allows the president to declare, in consultation with the Cabinet, a state of emergency in Uganda. In 2011, the OPM's Department of Disaster Preparedness and Management developed a National Policy for Disaster Preparedness and Management aimed at "establishing institutions and mechanisms that will reduce vulnerability of people,

livestock and wildlife to disasters" (Directorate of Relief, Disaster Preparedness and Refugees, OPM 2010). In 2013, the PHEOC was established as the central coordinating unit tasked with receiving and analyzing information on health emergencies and natural disasters in real time (MoH 2020).

Upon initiating the first nationwide lockdown for COVID-19, on March 30, 2020, GoU immediately set up the institutional arrangements to implement a national response. This consisted of a multisectoral National Task Force, with representatives from the Office of the Prime Minister and Ministries of Health, Internal Affairs, Defense, Works and Transport, and Trade and Industry, as well as from the information and communications technology sectors, Kampala Capital City Authority (KCCA), and the private sector.

FIGURE 51: THE PILLARS OF THE UGANDA COVID-19 PREPAREDNESS AND RESPONSE PLAN



Source: Margini et al. 2020.

The Ministry of Health provided policy guidance, strategic direction, and technical guidance to the entire health sector (national and subnational) in its COVID-19 response efforts. The ministry has also collaborated closely with the Uganda People's Defense Forces on operations. In this role, the ministry has developed the national COVID-19 Preparedness and Response Plan, which is modeled on WHO guidance on country-level preparedness and response. This technical guidance document underwent extensive revisions and is yet to be released. Figure 54 presents the eight pillars of the latest draft of GoU's COVID-19 Preparedness and Response Plan.

**Significant opportunities to mitigate COVID-19-related health and economic effects arise through leveraging of digital innovation.** An April 2020 survey of MSMEs found that only 30% of companies innovated their procurement and supply delivery channels, such as mobile door-to-door delivery (UNCDF et al. 2020). Digital solutions benefit companies and also support the management of public health emergencies, and they can be put forward in key sectors like education and health, where uptake is only 23% and 30% respectively (UNCDF et al. 2020).

**Innovations-for example, machine learning-driven leveraging of COVID-19, health, and online language sentiment data-may transform government planning and policy effectiveness.** Early pandemic surveys, for example, note greatest pessimism among capital- and labor-intensive sectors, such as water, environment and public facilities management, extractives, and construction. However, surveys constitute only snapshots in time. AI-driven methods can leverage large data sets, including online language metadata, economic data, climate data, and data representing change in the pandemic as well as policy response, to identify optimal policy response for specific conditions. Sector-specific sentiment may be viewed in real time alongside economic and other data. In this way, machine learning can enhance forecasting of social phenomena; for example, it has achieved

85% accuracy in regard to violence (Mahony, Albrecht, and Sensoy 2019). This approach could also be employed to develop models that forecast and explain not only change in the pandemic, but also change in the effect of the pandemic and accompanying government policy on regularly produced economic indicators. It could further identify how other events, sensitivities, and environmental factors affect change in economic conditions, or how sentiment around issues such as operating costs-a particularly sensitive issue for SMEs-is affected. These data would empower government to optimize the selection of its interventions as well as interventions' timing, location, collaborators, scale, and language and means of communication for greatest impact.





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