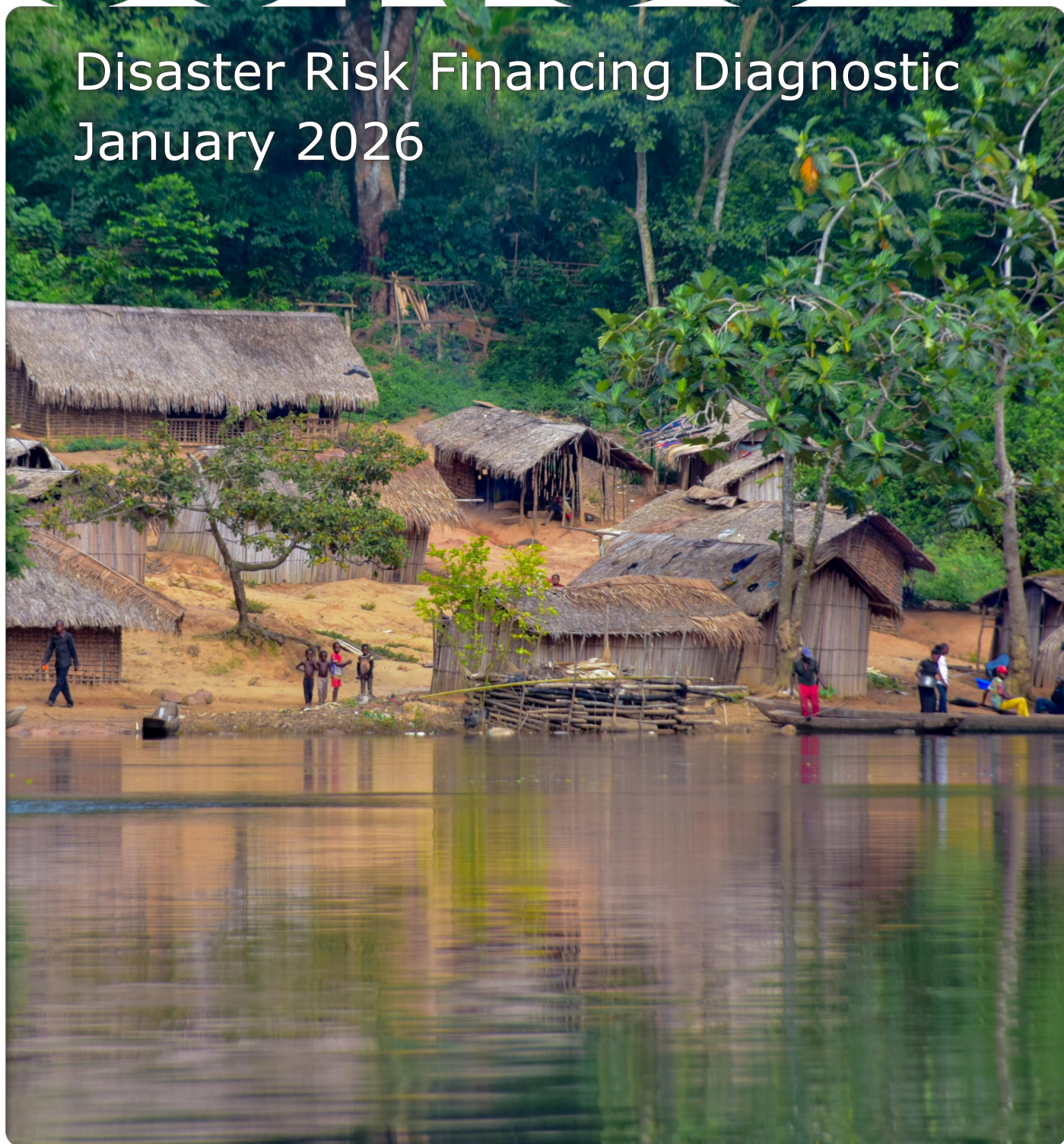




Democratic Republic of CONGO

Disaster Risk Financing Diagnostic
January 2026



Democratic Republic of
CONGO

Disaster Risk Financing Diagnostic January 2026



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ACRONYMS

ARCA	Insurance Regulatory and Supervisory Authority
Cat DDO	Catastrophe Deferred Drawdown Option
CERP	Emergency and Crisis Response Project
CERC	Emergency and Crisis Response Components
COUSP	Public Health Emergency Operations Center
CPAU	Permanent Alert and Emergency Monitoring Unit
CSN-GHC	National Solidarity and Humanitarian Disaster Management Fund
DGSI	General Directorate of Fire and Rescue
DCP	Directorate of Civil Protection
DRF	Disaster Risk Financing
ETD	Decentralized Entities and Territories
FONER	National Road Maintenance Fund
FRD	Resilience and Sustainability Facility
DRF	Disaster Risk Financing
DRM	Disaster Risk Management
GSFF	Global Shield Financing Facility
IDA	International Development Association
MFIs	Microfinance Institutions
MASA	Ministry of Agriculture and Food Security
MASAHSN	Ministry of Social Affairs, Humanitarian Actions, and National Solidarity
MOB	Ministry of the Budget
MoF	Ministry of Finance
MDR	Ministry of Rural Development
METTELSAT	National Agency of Meteorology and Satellite Remote Sensing
MISA	Ministry of the Interior, Security, Decentralization and Customary Affairs
MITP	Ministry of Infrastructure and Public Works
MSE	Ministry of Fisheries and Livestock
MSPHP	Ministry of Public Health, Hygiene and Social Security
MSME	Small and Medium-sized Enterprises
NADP	National Agricultural Development Program
ODR	Department of Roads
OVD	Department of Streets and Drainage
WFP	World Food Program
PDNA	Post-Disaster Needs Assessment
DRR	Disaster Risk Reduction
REPAIR	Regional Emergency Preparedness and Access to Inclusive Recovery
SCTP	Social Cash Transfer Program
SSRLP	Social Support for Resilient Livelihoods Project
STEP	Social and Economic Transformation Project
IPU	Informal Production Units
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs

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EXECUTIVE SUMMARY

The Democratic Republic of Congo (DRC) is a low-income country endowed with immense natural potential (minerals, forests, agricultural land) but facing major structural challenges. In 2024, the country's GDP grew by 6.5 percent, thanks to the mining sector whose dynamism is however expected to weaken in 2025 due to the temporary ban on cobalt exports. Inflation fell to 17.7 percent, compared to a consumer price index growth of 19.9 percent in 2023. Although resilient, the economy is undiversified, with 17.4 percent of GDP concentrated in the mining sector. It is also vulnerable due to the exposure of the agricultural sector—which accounted for 34.6 percent of GDP in 2024—to climate change. The private sector is largely dominated by the informal economy and remains embryonic, hampered by inadequate infrastructure and a constraining business environment. Despite its performance, the DRC is one of the poorest countries in the world: 74.9 percent of the population lives below the extreme poverty line. Persistent conflicts in the east, including the resurgence of the M23 armed group, have displaced more than 6.7 million people¹ and led the government to lose control of about 20 percent of the national territory. As regards human development, the DRC ranks 164th out of 174 countries in the Human Capital Index, with a high rate of child malnutrition (42 percent of children under 5 years old) and low school completion rates, particularly among girls. Fragile governance, recurrent conflict, and limited access to basic services have stymied the country's development for a long time.

Key Risks

The country's exposure to various hazards accentuates the vulnerability of the population and the political instability. The DRC is mostly exposed to floods, human epidemics and animal diseases, and volcanic eruptions. Other significant risks include landslides, droughts, wildfires, and earthquakes. The available data show that 189 disasters occurred between 2000 and 2025, affecting approximately 8.2 million people. These risks—which can have impacts on public finances that are difficult to quantify²—certainly undermine fiscal balance, macroeconomic stability, people's livelihoods, and food security. Responses to shocks are also constrained by the country's multiple fiscal priorities and by the security situation in the east of the country, which is likely to hinder their implementation.



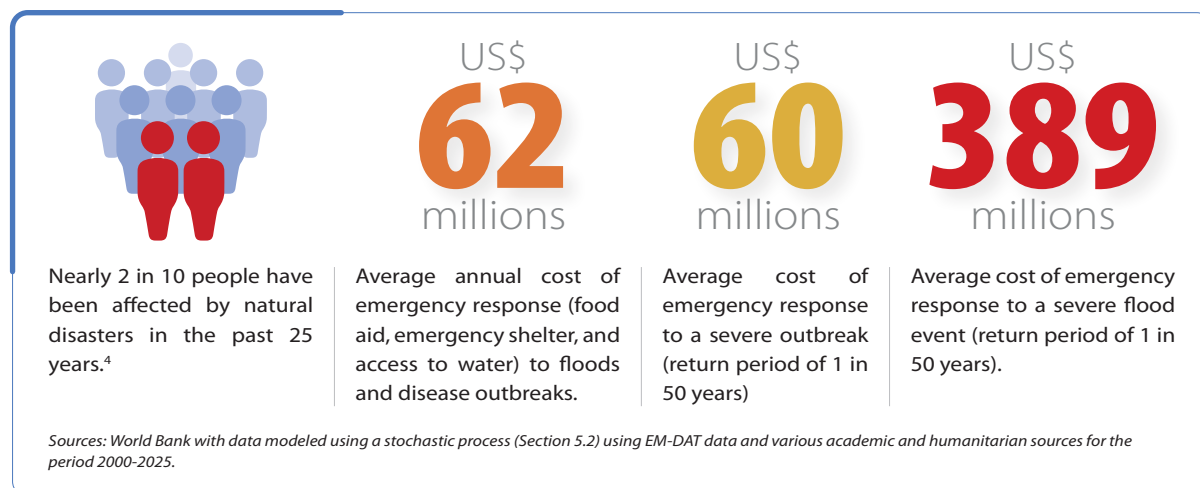
Financial Impact of Disasters

Modeling work conducted on floods and epidemics, the only hazards for which sufficient data is available, shows that emergency assistance to populations in the event of a severe or extreme shock would result

¹ Out of a total population of 106 million people (World Bank, 2023), or 6.3 percent of the population.

² The IMF has identified that the impacts on debt, expenditure, income, and the primary balance vary greatly by country and type of hazard, but that the shocks create macro-fiscal instability that must be anticipated with sufficient fiscal space. The assumption of the responsibility of development partners for a significant part of the response—which was the case in the DRC up to 2025—may explain marginal impacts on public finances (see Fuje, H., Yao, J., Mo Choi, S., & Mighri, H., 2023). Fiscal Impacts of Climate Disasters in Emerging Markets and Developing Economies. IMF Working Papers, 2023(261), A001. Retrieved Aug 19, 2025, from <https://doi.org/10.5089/9798400262913.001> and Amir Imam, P. and Kpodar, K. (2022). Climate Change and Fiscal Sustainability in Sub-Saharan Africa. Journal of Development Economics, 30(4), 89-124. <https://doi.org/10.3917/edd.363.0089>.

in significant fiscal costs. Floods could require emergency interventions estimated at about US\$390 million for a flood event of a 50-year magnitude (2 percent chance of occurrence), and about US\$800 million for a flood that occurs once every 100 years (1 percent chance of occurrence). For epidemics, the needs are estimated at about US\$60 million and US\$86 million for shocks occurring every 50 and 100 years, respectively. The average annual combined response cost for these two hazards is estimated at US\$62 million, or 0.08 percent of GDP.³



Disaster Risk Finance Instruments and the Financing Gap

Having to address a high number of emergencies on a limited budget makes the government unable to adequately respond to the consequences of shocks. The DRC currently has three disaster risk financing (DRF) instruments, of which the National Solidarity and Humanitarian Disaster Management Fund (CSN-GHC) is the main one. It is supplemented by two others: a budgetary reserve for "Intervention(s) for natural disasters, calamities, and major accidents" mobilized for various types of unforeseen events, including conflicts (Section 4.1.2), and a portion of the resources of the National Road Maintenance Fund (FONER). These mechanisms depend for the most part on the national budget, which does not always allow a timely mobilization of funds. Although the transparency and monitoring of budget execution have improved in recent years, the available information on the use of these instruments remains incomplete, and shows that the funds deployed to respond to natural disasters (~ US\$3.5 million) are severely constrained by the country's other needs, especially security. This means that the state's response can only be minimal, leaving humanitarian organizations and the private sector to bear much of the cost of emergency response, recovery, and reconstruction.

The explicit contingent liability of the government⁵ is not precisely defined and can only be estimated on the basis of the regulatory texts. These texts give broad responsibilities to some ministries while others, on the contrary, work under overly restrictive ones given their actual roles in the response. The implicit liabilities, which reflect the historical response motivated by moral or political considerations to which the government is not necessarily bound, are difficult to estimate due to the lack of systematic identification of fiscal expenditures related to disaster response. The analysis produced in this diagnostic shows that the average annual emergency

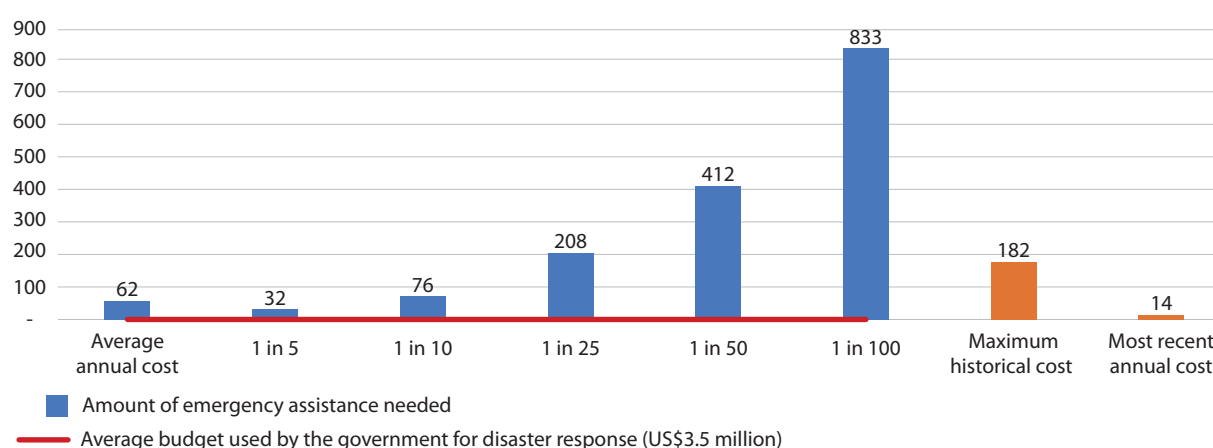
³ 2024 GDP (current prices): US\$ 70.75 billion, [World Bank](#).

⁴ Based on the data collected and available for analysis, this figure would be approximately 1.2 people in 10. However, the existence of additional databases that could not be used in this assessment leads the authors to believe that this figure is underestimated and can be extrapolated to 2 people in 10.

⁵ i.e., the government's portion of the losses.

response required for two types of shocks combined—floods and epidemics— could reach US\$62 million,⁶ or US\$76 million in the case of a moderate shock (10% probability of occurrence) and more than US\$833 million for an extreme shock (1% probability of occurrence). In view of the funds historically mobilized for response (estimated at US\$3.5 million), budgetary instruments appear insufficient, pointing to an annual shortfall of US\$58.5 million. This figure could be much more significant if all hazards (volcanic eruptions, landslides, etc.) and the contingent liabilities of the government (reconstruction of public infrastructures, assistance to farmers, etc.) were taken into account.

FIGURE 1
Estimated cost of emergency response to floods and epidemics in DRC by return period⁷



Sources: World Bank stochastic modeling with EM-DAT and UNOCHA data and various academic and humanitarian sources over the period 2000-2025.

Pre-arranged financing solutions can allow the government to better financially prepare for climate shocks, especially moderate to extreme shocks for which these instruments provide significant population coverage. The lack of dedicated resources may force the government to reallocate budgets or to borrow ex post (e.g., the Covid-19 pandemic) at the expense of other equally critical investments and expenditures. The modeling work used in this diagnostic shows that the resources historically mobilized by the government to respond to disasters can only cover 50,000 people (an estimate based on a per-person response cost of U\$80). The use of pre-arranged financing solutions would allow the government to finance a response covering between 280,000 and 4 million people, depending on the selected strategies and the magnitude of the shocks experienced (Section 6.1.2).

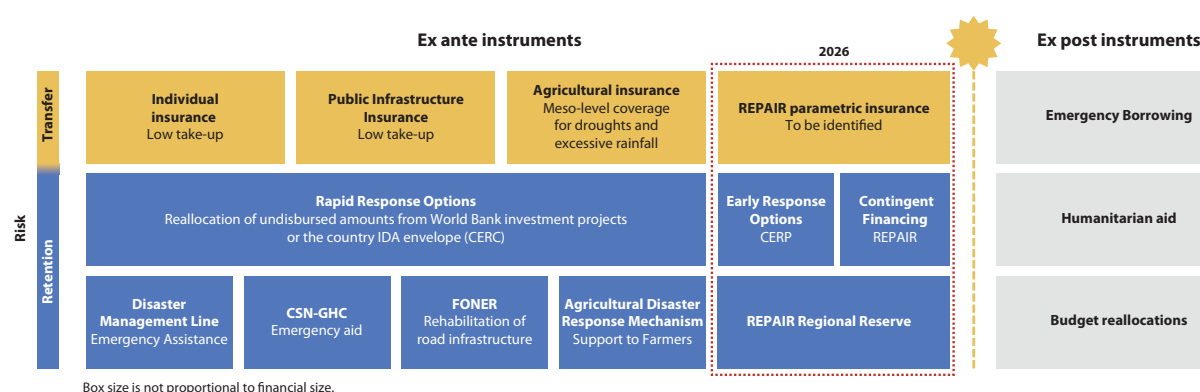
Development partners are mobilizing to provide the DRC with pre-arranged DRF instruments that will strengthen its resilience to shocks (Figure 2). These instruments include an emergency reserve of US\$20 million, as well as a parametric meso-insurance policy of a similar amount to support farmers affected by shocks. The DRC should also have additional instruments at its disposal by late 2025 or early 2026, including a Rapid Response Option mechanism to reallocate funds from International Development Association (IDA) projects, as well as US\$150 million in financing to be deployed in the form of reserves, contingent financing, and sovereign insurance, thus providing the DRC with financial coverage to respond to shocks of varying severity. The government is also exploring the establishment of a deferred drawdown option for natural disasters (Cat-DDO).

⁶ i.e., 0.7 percent of the State's tax revenues in 2024.

⁷ NB 1: The losses in a "1 in 5 years" event are lower than the average annual loss due to the asymmetry of the distribution of losses, which is dominated by rare and costly shocks (e.g. 1 in 50 years, 1 in 100 years) causing the average to rise sharply, while a 1 in 5 year event remains of a more modest magnitude.

NB 2: Shocks are modeled independently, creating a diversification effect which is not always true, especially when disasters are potentially linked (e.g., cholera epidemics and floods in eastern DRC). Thus, in the modeling, a flood with a 5 percent chance of occurring will not necessarily happen at the same time as a cholera epidemic with a 5 percent chance of occurring. The resulting correlation of the simulation is random and depends on the stochastic modeling result for each of the 15,000 scenarios used.

FIGURE 2
Overview of disaster risk financing instruments in the DRC



Several measures, including the institutional clarification of disaster response recently adopted by regulation, as well as a centralized collection of data on disasters and related expenditures, would strengthen the DRF mechanism: (i) the implementation of the clarification of the responsibilities of the various ministries and public entities in disaster risk coordination, management, and financing (ii) the creation of a loss and damage database and an accurate monitoring of the execution of budget expenditure to respond to disasters; (iii) the creation/development of insurance products against rare and severe natural shocks (earthquakes), and their adoption by the public and private sectors to reduce the government's response needs in the event of shocks; iv) the strengthening of financial preparedness and the development of response financing vehicles' financial autonomy.

National Disaster Risk Financing Strategy

DRC should study the available risk transfer options and design a DRF strategy to determine which populations to cover as a priority and to optimize the use of financial instruments. Through its access to response instruments set up with partners, the government has a range of pre-arranged financing instruments at its disposal to respond to disasters. However, the modalities for their use/activation remain to be defined, which could be the subject of a strategy, even a concise one. The DRC will also have access to risk transfer solutions to cover certain hazards with potentially devastating consequences, such as the occurrence of a new pandemic, or floods of 100-year magnitude. The government should study the insurable hazard and coverage options available on the market to identify their cost-benefit ratio and relevance to the country.

Strategic Options and Areas for Improvement

Several strategic options aimed at strengthening the financial resilience of the government, households, MSMEs, and farmers could be further analyzed as part of the development of a national strategy to assess their relevance and feasibility. A prioritization of these options is also proposed (Figure 3).

FIGURE 3
List of key recommendations

#	Recommendation	Actor	Impact	Time frame
Improving the regulatory and institutional framework				
1	Establish a central role for the MoF in the institutional framework for disaster risk financing	Government	High	Short term (-1 year)
2	Monitor the implementation of the new framework for emergency response coordination, management, and financing	MISA, MASAHSN	High	Short term (-1 year)
3	Name an agency responsible for centralizing disaster data and organize a systematic data collection process with clear responsibilities and a common methodology	MISA, MASAHSN	High	Medium term (2-3 years)
4	Develop methodologies to improve the modeling of fiscal risks related to disasters in the annual Finance Act	MdB	High	Medium term (2-3 years)
Public investments in new DRF instruments				
5	Develop and adopt a Disaster Risk Finance Strategy to coordinate the various disaster risk financing instruments and define coverage priorities for the population, farmers, and businesses in the event of a disaster, with a focus on the most vulnerable	MdF	High	Short term (-1 year)
6	Strengthen financial preparedness for disasters by diversifying financing sources and developing the financial self-sufficiency and institutional capacity of response financing vehicles (in particular the CSN-GHC)	MoF, MoB, Relevant ministries	Medium	Medium term (2-3 years)
7	Strengthen the capacity of ARCA and the insurance sector	MoF, ARCA, Partners	Medium	Medium term (2-3 years)
8	Finalize the process of accession to the Pan-African mutual risk management organization	ARCA	Low	Medium term (2-3 years)
State financial resilience				
9	Conduct a comparative study of parametric insurance options covering rare and extreme shocks to determine whether they are economically advantageous for the government	MoF, ARCA, Development Partners	High	Short term
Financial resilience of households, farmers, and small businesses				
7	Support the development of private insurance, possibly through public-private partnerships and particularly for farmers, to reduce the government's liability in emergencies and strengthen the financial resilience of households	MoF, ARCA, Partners	High	Medium term (+2 years – 5 years)
8	Explore the development of an adaptive social protection system	MoF, MSPHP	Medium	Medium term (2-3 years)
9	Conduct analytical work to inform disaster risk financing solutions targeting MSMEs	MoF	Medium	Medium term (2-3 years)

1

BACKGROUND



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The Democratic Republic of Congo (DRC) is the largest country in sub-Saharan Africa. With an area equivalent to the size of Western Europe (2.3 million km²), the DRC enjoys an exceptional natural heritage (with strategic minerals such as copper, cobalt, and gold), the second largest tropical forest in the world, considerable water resources, abundant arable land, and a unique biodiversity. This wealth is unevenly distributed among the population, since 85.3 percent of its 105.8 million inhabitants live on less than US\$3 per day (2020),⁸ making the country one of the five poorest in the world. About 52 percent of the population lives in rural areas (2024), and Kinshasa, the capital, concentrates the majority of economic activity.

The DRC has been affected by numerous conflicts since the end of the Congo Wars (2003) and by natural disasters that have generated chronic instability and significant population movements. The resurgence of the M23 armed group since 2021 and the very recent conflict that led M23 to occupy nearly 20 percent of the national territory, mainly in the provinces of North Kivu and South Kivu, have been fueling violence, land conflicts, population displacements, and serious human rights violations. This instability is exacerbated by natural disasters (floods, epidemics, landslides, droughts, etc.) that regularly affect the country, especially its most vulnerable inhabitants, and feeds a lasting humanitarian crisis, with a population of over 6.7 million internally displaced persons to protect in a context of still-fragile governance and chronic underinvestment in the public health system and infrastructure.

The Congolese economy is showing resilience despite these many challenges but remains undiversified and dominated by the informal sector. The DRC recorded a GDP growth of 6.7 percent in 2024 (compared to 8.6 percent in 2023⁹), driven by the mining sector (+12.8 percent year-on-year) which continues to dominate the economy (17.4 percent of GDP). Inflation remained high at 17.7 percent¹⁰ in 2024, but the currency (the Congolese franc) has stabilized and external deficits have narrowed. The rest of the economy, particularly the agricultural sector, remains underdeveloped and vulnerable to the effects of climate change. The informal economy accounts for most of the economy, providing jobs to around 89 percent of the employed population in the DRC¹¹ and accounting for ~82 percent of GDP. Basic infrastructure is inadequate, and public services are underperforming, hampering investment and employment. The private sector remains nascent, with high asset concentration and transaction costs.

As regards social aspects, the DRC ranks 164th out of 174 countries on the Human Capital Index (0.37),¹² reflecting the cumulative effects of poverty, conflict, and poor access to essential services. Chronic malnutrition affects 42 percent of children under 5 years of age, and nearly half of all child deaths are related to undernutrition. School enrollment is on the rise (21.3 million primary school students in 2024), but secondary school completion rates remain low, especially among girls.

The impacts of natural disasters, which have already affected almost 2 in 10 people in the DRC over the past 25 years¹³, are expected to increase with changes in the DRC's tropical climate and a rise in extreme events.¹⁴ The tropical climate of the DRC, characterized by humid equatorial zones and high rainfall, is already experiencing significant variability, with changes in the distribution of dry and rainy seasons directly affecting agriculture and ecosystems. Temperatures are expected to continue to climb, and disasters, particularly floods, droughts and epidemics,¹⁵ are expected to become more frequent and intense, with consequences for the most vulnerable as well as on infrastructure (roads, communications, etc.). The agricultural sector is expected to be affected along its entire value chain,¹⁶ causing food prices to rise—which is one of the main factors of poverty in the DRC—due to already limited agricultural yields and poor land management. Climate change could also increase vulnerabilities in the energy and water sectors, create disruptions in related infrastructure, and impede urban development and growth. It could thus reverse DRC's hard-won human capital gains, with a disproportionate impact on the poor, especially women and marginalized populations.

8 DRC, World Bank.

9 DRC, World Bank.

10 DRC, MFI.

11 [Analysis of Business Climate in LDCs - DRC](#), International Employers' Organization, March 2023.

12 [DRC – Country Economic Memorandum, Pathways to Economic Diversification and Regional Trade Integration](#), World Bank, September 2023.

13 Based on the data collected and available for analysis, this figure would be approximately 1.2 people in 10. However, the existence of additional databases that could not be used in this assessment leads the authors to believe that this figure is underestimated and can be extrapolated to 2 people in 10.

14 CCDR – DRC, World Bank, 2023.

15 Outbreaks of climate-sensitive Ebola, malaria, cholera, and other diarrheal and vector-borne diseases are expected to increase as floods and droughts intensify, with implications for labor productivity.

16 Such as damaged crops, decreased yield potential, pest damage, deterioration of animal health and fisheries yield, increased production costs, and lower labor productivity due to heat stress.

2

RISK PROFILE



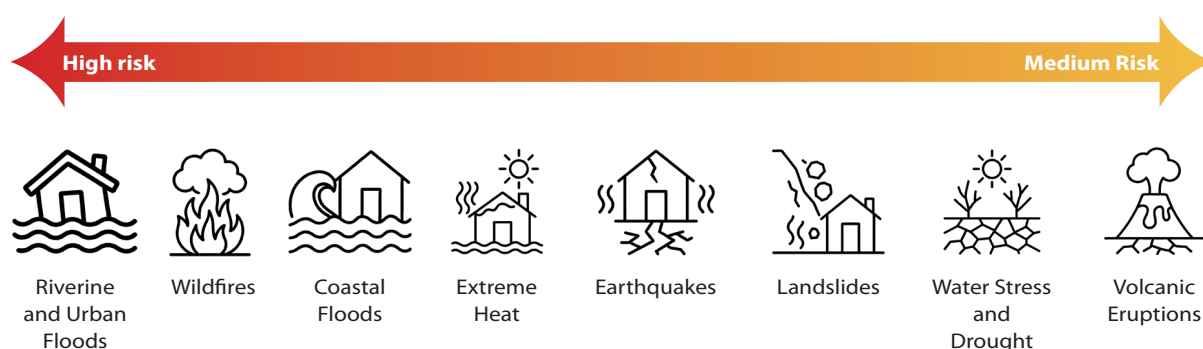
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2.1 General information

DRC is one of the countries most exposed to natural disasters, especially riverine floods, extreme heat, and wildfires, across almost its entire territory. It is also exposed to risks of coastal flooding, landslides, drought, earthquakes, as well as volcanic eruptions in parts of the country. It ranks 184th out of 187 in terms of vulnerability and preparedness to climate change in the 2024 ND-GAIN Country Index¹⁷ and, according to the INFORM Risk¹⁸ index, its level of exposure to disasters is very high (8.3/10), as is its vulnerability (7.8/10) and its low adaptation capacity (8.1/10).

DRC is particularly exposed and vulnerable to climate hazards

FIGURE 4
DRC's exposure to disaster risks



Source : World Bank with Thinkhazard.

Historical disaster data show that, over the past 25 years, the DRC has been affected by 312 disasters,¹⁹ including 142 floods, 83 landslides, 78 epidemics, four droughts, and two volcanic eruptions (Figure 5). These events have affected 8.2 million people over 25 years, i.e., an average of 300,000 people each year (Figure 6). Some events occur several times a year, such as epidemics, floods, and landslides. Floods and epidemics are the phenomena that most affect the population, with 6.5 million victims for the former and 1.23 million for the latter. However, public data remain incomplete and scattered, due to the lack of a centralized information collection system and a systematic and reliable census of the disasters affecting the population (Section 3.2.).



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¹⁷ ND-Gain Country Index, August 2024.

¹⁸ INFORM-Risk DRC ranking, DRMKG-INFORM, 2025.

¹⁹ The DRC has been/is also affected by cyclones, heat waves, as well as man-made disasters (conflicts, population movements, etc.), and catastrophes of technological origin (explosions, cyber-risks, etc.). These disasters were excluded from the scope of this diagnostic because of their small size (cyclones) or because they require separate studies (heat waves, man-made and technological disasters).

FIGURE 5
Number of disasters in DRC between 2000 and April 2025

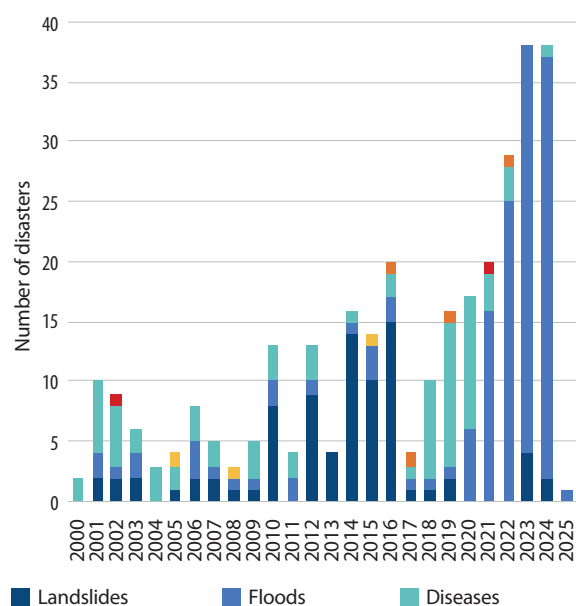
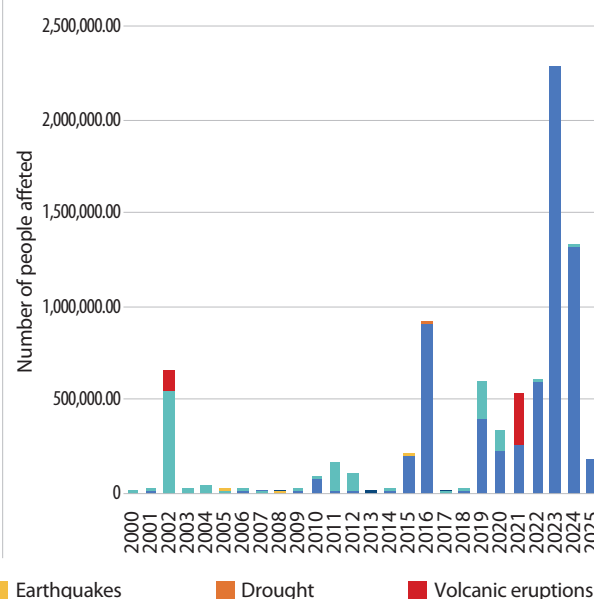


FIGURE 6
Number of people affected by disasters between 2000 and April 2025 by type of event



Sources: EM-DAT, NASA, WHO, UNOCHA, Ministry of the Interior, Academic Sources.

BOX 1 HAZARD, EXPOSURE, VULNERABILITY

Risk is often represented as the result of the interaction between exposure, vulnerability, and a potential hazard of a certain intensity:

- **A hazard** is a physical event, phenomenon, or human activity that is likely to cause loss of life or bodily injury, damage to property, social or economic disruption, or environmental degradation. Hazards include latent conditions that may eventually become a threat. They can have various origins: natural (geological, hydrometeorological, or biological) or anthropogenic (environmental degradation and technological risks).
- **Exposure** refers to the entire population, infrastructure (including habitats), ecosystems, production systems, and other tangible human assets that can be affected by a given hazard.
- **Vulnerability** is defined as a set of conditions determined by physical, social, economic, or environmental factors or characteristics that describe the predisposition of certain elements to be affected by a certain hazard.

FIGURE 7
Hazards, exposure, vulnerability, risk



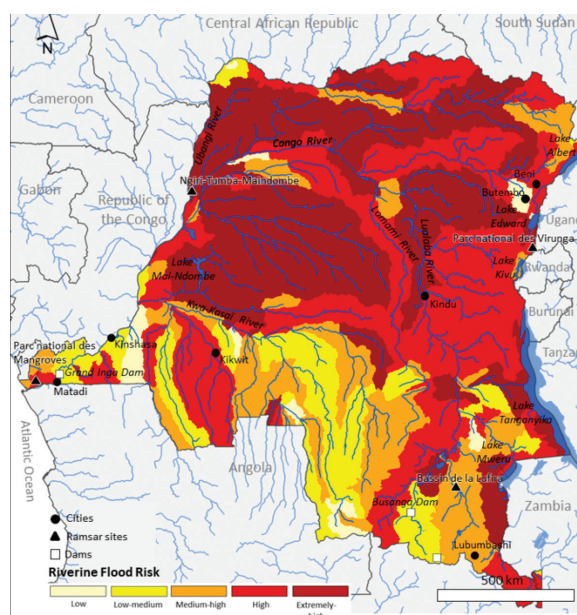
2.2 Floods

Riverine and urban floods are the most frequent and devastating disasters. The DRC is the country most prone to river flooding in the Congo River basin, with 2.5 percent of its infrastructure and 1.6 percent of its population exposed.²⁰ Floods affect almost the entire country (Figure 8), especially during the equatorial rainy season. Multiple vulnerabilities such as unplanned urbanization, poorly maintained infrastructure, obsolete and uncleaned drains, deforestation, land use change, and watershed degradation also expose the DRC to an increased risk of urban flooding. Public databases record 142 floods that have affected the population since 2000, nearly 60 percent of which were concentrated in just six provinces.²¹ However, this number is likely an underestimate, as there is no systematic census. Episodes affecting Kinshasa (15 percent of the population), North Kivu (7.7 percent), and South Kivu (6.7 percent) are the most devastating, these provinces being home to a large part of the population (Figure 8). These floods are also vectors for the spread of diseases such as cholera and malaria.



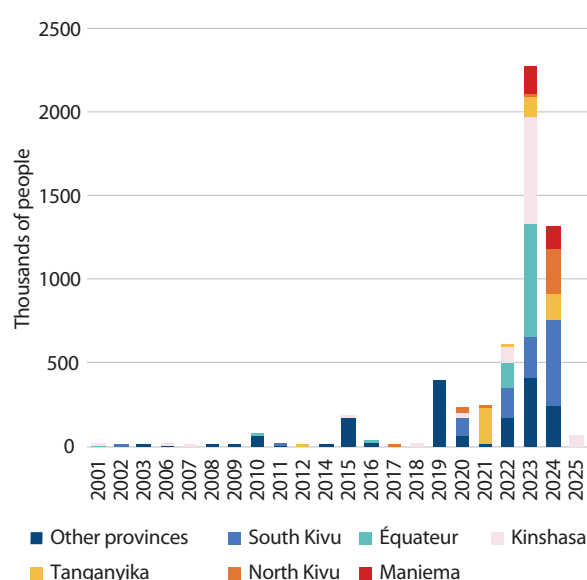
The DRC is at risk of riverine flooding across almost all of its territory

FIGURE 8
Riverine flood risk exposure



Source : USAID/SWP²²

FIGURE 9
Number of people affected by floods since 2000 by province



Sources: World Bank with EM-DAT, UNOCHA data

Floods appear to cause significant losses and damage which are not systematically assessed by the authorities and require an expensive emergency response. Annual losses from flooding are estimated at 0.4 percentage points of real GDP²³ and particularly affect the transport sector. Disruptions to urban traffic leads to considerable increases in travel time in urban centers such as Kinshasa, generating annual losses estimated at US\$32.6 million,²⁴ as well as increased transport costs which contribute to a rate of inflation of 11 percent of

20 Bola, G. & Tshimanga, Raphael & Neal, Jeffrey & Hawker, Laurence & Trigg, Mark & Mwamba, Lukanda & Bates, Paul. (2022). [Multiple return period flood risk assessment in the Congo River Basin](#). 10.1002/9781119842125.ch27.

21 South Kivu: 19 floods, Tanganyika: 17, North Kivu: 15, Equateur: 13, Kinshasa: 11, Maniema: 8, Other provinces: 59 floods.

22 [Democratic Republic of the Congo Water Resources Profile Overview](#), USAID/SWP, 2021.

23 [IMF-DRC General Issues](#), IMF, 2022.

24 He, Yiyi; Thies, Stephan; Rentschler, Jun; Avner, Paolo. 2020. The Impact of Flooding on Urban Transit and Accessibility: A Case Study of Kinshasa. Policy Research Working Paper; No. 9504. © World Bank. <http://hdl.handle.net/10986/34981> License: CC BY 3.0 IGO.

the Consumer Price Index (CPI) basket. Damage caused to infrastructure, which is already severely inadequate, is well documented, but estimated only sporadically in the context of appeals for donations, and thus remains difficult to measure (Section 2.7).

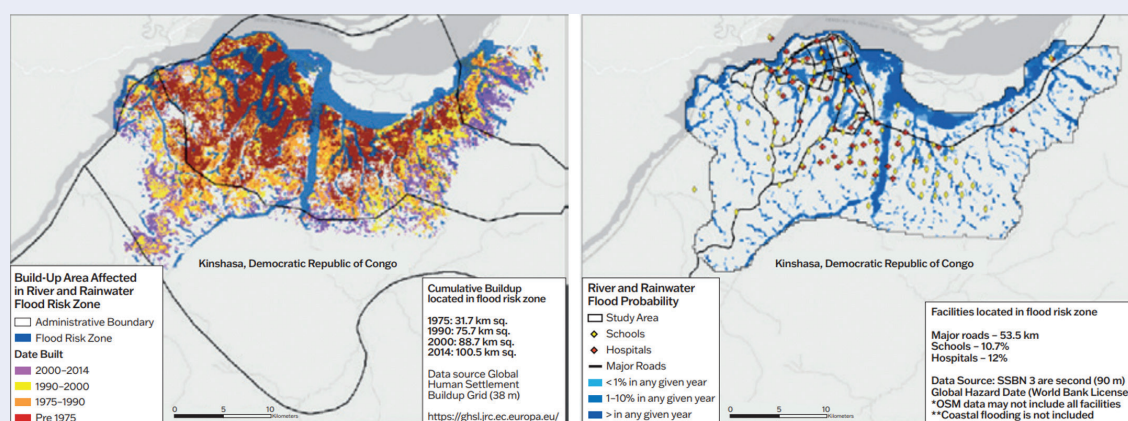
BOX 2

URBAN RESILIENCE IN THE CITY OF KINSHASA

Kinshasa, a megacity of nearly 17 million people, is facing recurrent flooding caused by both heavy rainfall and the overflowing of the Congo River and its tributaries. Changes in rainfall patterns due to climate change are exacerbating the rise in water levels, while inadequate land use management, lack of urban planning controls, poor or aging drainage systems, uncontrolled urbanization, and the accumulation of waste clogging canals is further aggravating the impact of the floods. The city generates more than 10,000 tons of waste every day, 98 percent of which is dumped in the open, obstructing gutters where they exist and preventing normal water flow, leading to flooding, environmental degradation, and health risks.

FIGURE 10

Built areas and infrastructure exposed to riverine and pluvial flooding



Source: CDDR RDC

Implementing disaster risk reduction measures in Kinshasa and other urban centers such as Kalémie (Tanganyika province) is a priority and complements the post-disaster risk financing approach.

Resilience is built through a strengthening of the regulatory framework (drafting an urbanization law, local spatial development plans, sectoral disaster risk management assessments) and the establishment of critical flood management infrastructure such as drainage systems, riverbank restoration, and anti-erosion measures in selected vulnerable neighborhoods. These measures, whose cost-benefit is estimated between US\$3 and US\$4 in avoided damage per dollar invested,²⁵ make it possible to reduce post-disaster financing needs and increase the insurability of certain urban areas in the event of floods.



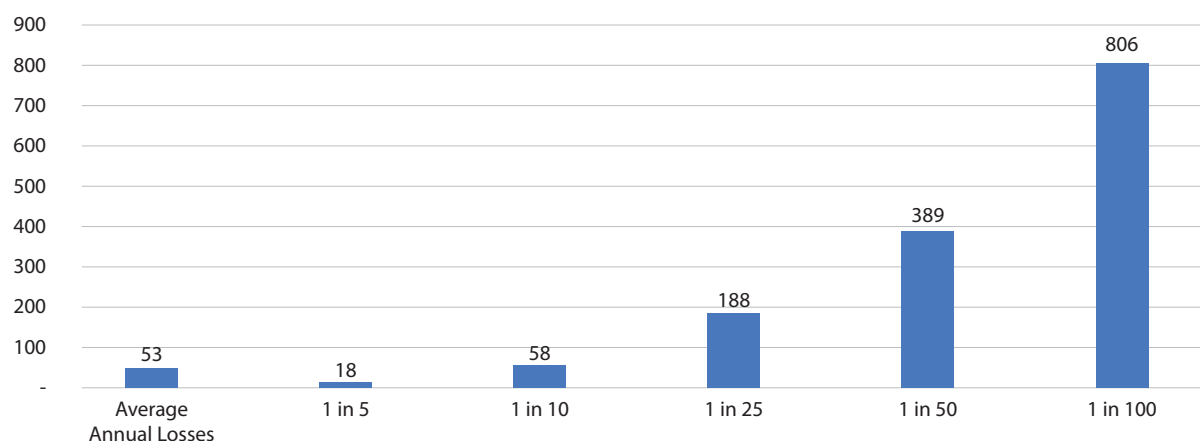
© Rémi Béalle / World Bank

25 Average cost-to-avoided loss ratio observed or estimated by different international organizations.

As part of this diagnostic, the cost of the government's emergency response to flooding—food aid, water, shelter—was modeled at an average of US\$53 million per year (Section 7.1.1). The cost of emergency response, which is mainly borne by humanitarian actors (Sections 4.3.1 and 5.1), is estimated at approximately US\$390 million for a rare severe event with a return period of 1 in 50.

FIGURE 11

Modeled cost of emergency response for floods in US\$ millions for different return periods



Sources: World Bank stochastic modeling with EM-DAT and UNOCHA data and various academic and humanitarian sources over the period 2000-2025.

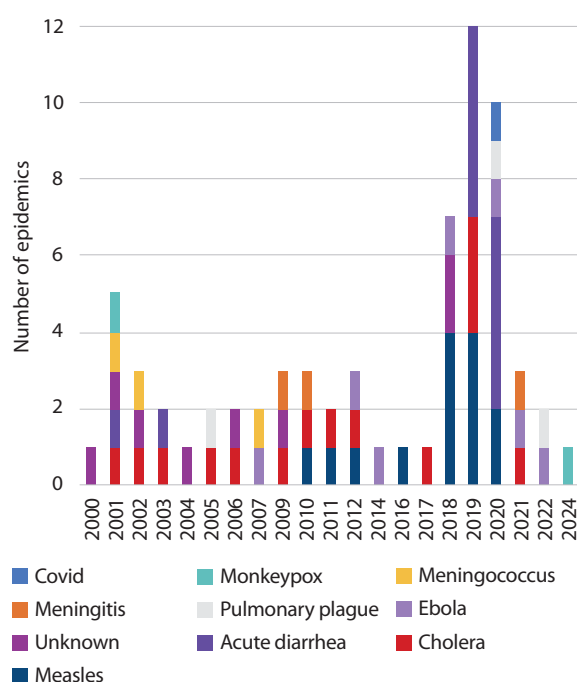
2.3 Epidemics and epizootic diseases

The DRC is exposed to recurring epidemics, the severity of which is aggravated by the poor health and safety conditions of the population. Despite the many advances made in terms of access to water resources and sanitation works, only 35 percent of the population has access to water, and 16 percent has access to basic sanitation facilities. These precarious conditions, which can deteriorate further in the event of disasters, promote the emergence of bacterial and viral diseases (such as cholera), which the underfunded and constantly strained Congolese health system has difficulty containing. The deteriorating security situation, particularly in the eastern part of the country, exacerbates the effects of epidemics by hindering access to health facilities, hampering response efforts, and contributing to the spread of epidemics. The provinces of South and North Kivu are among the most affected by epidemics. Public databases record more than 77 epidemics over 25 years (Figure 12) affecting more than one million people (Figure 13), i.e., nearly three epidemics per year.



In the DRC, the precarious conditions of access to water, sanitation, security and dilapidated health infrastructure increases the risk of recurring pandemics

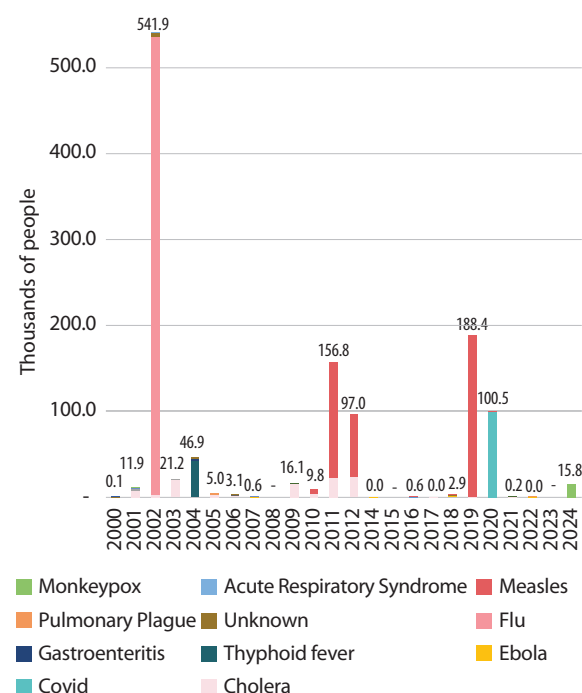
FIGURE 12
Number of epidemics by disease since 2000



Source : World Bank with EM-DAT, WHO data

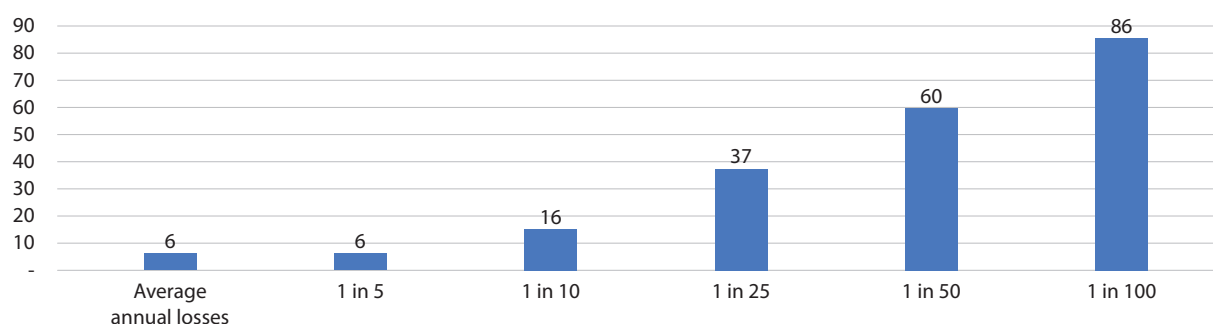
NB : To ensure better readability of the graph, diseases that have affected fewer than 1,500 people or that have occurred less than 3 times in 25 years are not shown. However, they are included in the total number of affected persons indicated for each year.

FIGURE 13
Number of people affected by epidemics since 2000 by disease



According to our diagnostic, the modeled cost of emergency response (vaccines, water, hygiene, sanitation, food aid, shelter—Section 7.1.1) would average US\$6 million per year for epidemics, and between US\$60 and US\$86 million for events with return periods ranging from 1 in 50 to 1 in 100 years. These estimates exclude the consequences of epidemics, in particular the loss of productivity due to illness or premature death, the cost of which was estimated at US\$2.4 billion per year in 2015 by the WHO (~3 percent of 2015 GDP).²⁶ Productivity losses related to diseases caused solely by the absence of health infrastructure in the DRC were estimated at US\$192 million per year in 2012.²⁷

FIGURE 14
Modeled cost of emergency response for epidemics in US\$ millions for different return periods



Sources: World Bank stochastic modeling with EM-DAT, UNOCHA data and various academic and humanitarian sources over the period 2000-2025.

²⁶ [A Heavy Burden: The Indirect Cost of Illness in Africa](#), WHO, 2015 - 41.25 billion international \$PPP in 2015, equivalent to US\$ 2.4 billion (CDF 438.07 for 1 int.\$PPP, the official exchange rate in 2015 was about CDF 2,880 per US\$1).

²⁷ [Impacts économiques d'un mauvais assainissement en Afrique – RDC](#), Water and Sanitation program, 2012.

Finally, epizootic and phytopathological diseases have a significant impact in the DRC due to the predominance of livestock farming and agriculture in the economy. However, there is no database that systematically records them, and no study has been conducted to assess their frequency or impact. Among these diseases, it is worth noting that infestations by fall armyworms, which affect maize, have been given a response plan by the DCR.²⁸ These infestations are estimated to have caused annual losses of respectively US\$300 million and US\$357 million in 2017 and 2018.

2.4 Volcanic eruptions

The DRC has a volcanic chain of seven volcanoes in the eastern part of the country, including Mount Nyiragongo, which overlooks Goma, the fourth largest city in the DRC. Nyiragongo is one of the most active volcanoes in the world,²⁹ and its eruptions (Figure 15) expose Goma to lava flows over almost its entire surface. Two eruptions have had significant consequences for the city of Goma over the past twenty years (Figure 16). The last eruption to date (May 2021) was particularly destructive since, unlike previous eruptions, which had been triggered by tectonic events, it was the consequence of a rupture in the volcano's structure, which generated lava flows less than 40 minutes after the detection of the first anomaly,³⁰ a very short reaction time to organize the evacuation of exposed populations even for the best volcanic observatories.

Most of the city of Goma is exposed to lava flows from the Nyiragongo volcano.

FIGURE 15
Map of relative susceptibility of lava flows and historical lava flows of Mount Nyiragongo

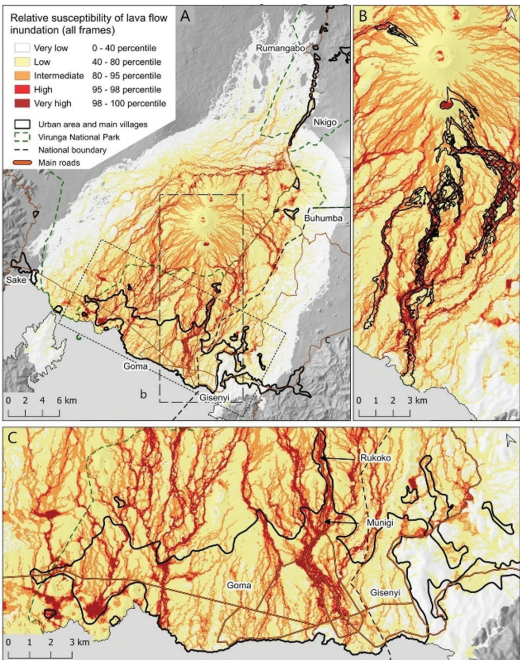
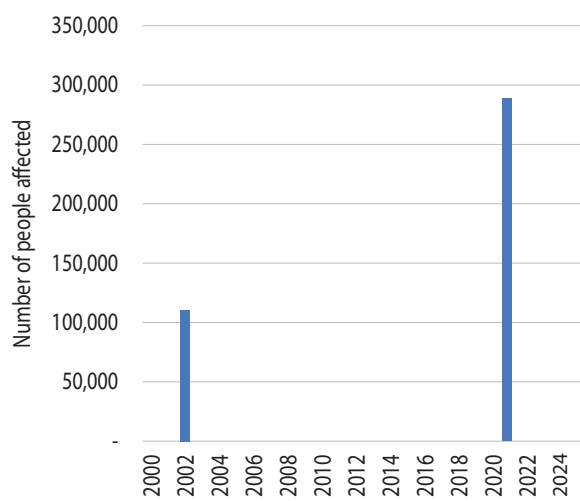


FIGURE 16
Mount Nyiragongo volcanic eruptions and number of people affected since 2000



Sources: EM-DAT, Humanitarian Reports

Sources: Academic³¹

28 [Response Plan 2019 -2024 -- Fall armyworm in DRC](#), Nov 2018.

29 This stratovolcano is one of the "volcanoes of the decade," a list of 16 volcanoes around the world recognized for their risks and proximity to highly populated regions. Mount Nyiragongo is characterized by a very fluid lava lake at the summit which may have generated lava flows with a velocity exceeding 100 km/h in 2002. Mount Nyamulagira, which is also active, is less likely to affect inhabited areas, so we deliberately exclude it from our analysis (see Kervyn, M., Barette, F., Poppe, S. et al. Assessing lava flow susceptibility at neighbouring volcanoes: Nyamulagira and Nyiragongo volcanoes, Virunga Volcanic Province. *J Appl. Volcanol.* 13, 5 (2024). <https://doi.org/10.1186/s13617-024-00143-y>).

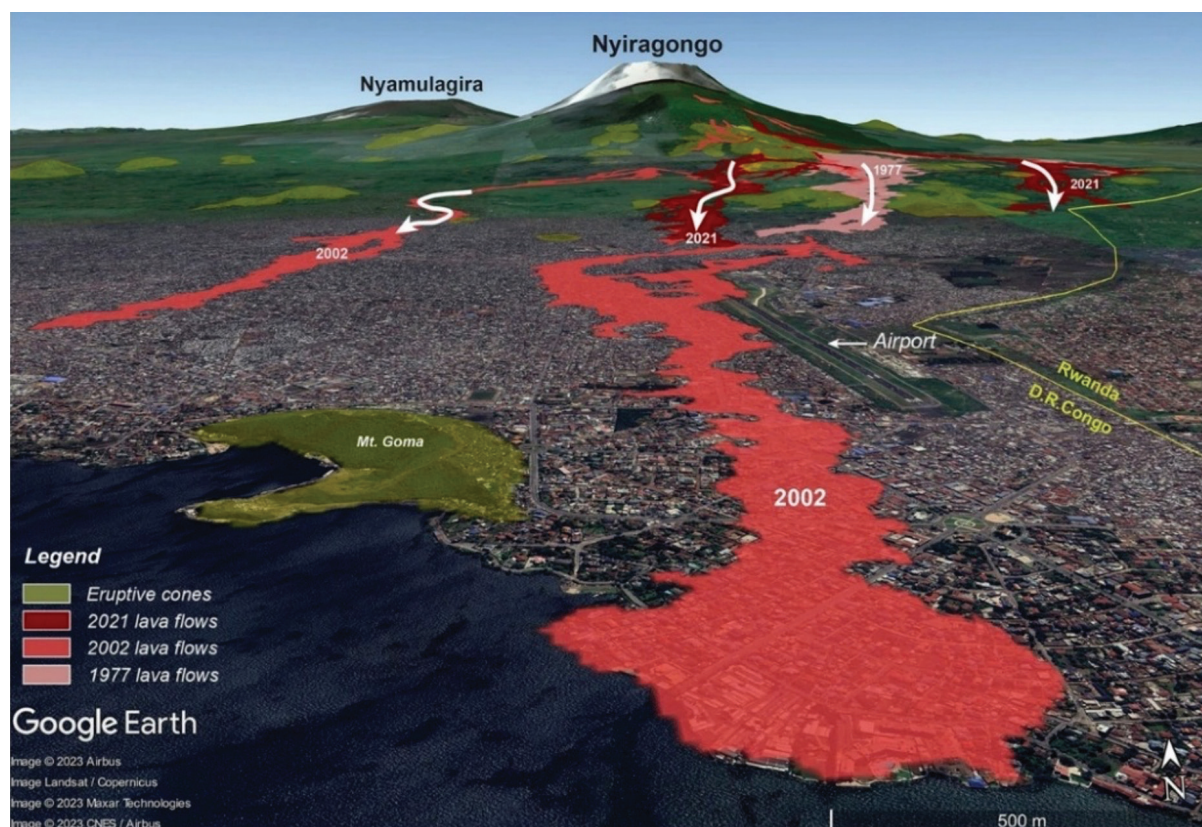
30 Smittarello, D., Smets, B., Barrière, J. et al. Precursor-free eruption triggered by edifice rupture at Nyiragongo volcano. *Nature* 609, 83–88 (2022). <https://doi.org/10.1038/s41586-022-05047-8>.

31 Kervyn, M., Barette, F., Poppe, S. et al. Assessing lava flow susceptibility at neighbouring volcanoes: Nyamulagira and Nyiragongo volcanoes, Virunga Volcanic Province. *J Appl. Volcanol.* 13, 5 (2024). <https://doi.org/10.1186/s13617-024-00143-y>.

The few contemporary eruptions of the volcano have caused significant damage. Exhaustive information on the damage caused by the two eruptions in the 21st century is unfortunately unavailable, but it appears to have been significant: the 2002 eruption destroyed part of the airport and many neighborhoods (Figure 17), and the 2021 eruption crushed neighborhoods and numerous infrastructure facilities, such as drinking water pipes and reservoirs, as well as power lines supplying Goma.³² The cost of the emergency response was quantified at US\$21.8 million in 2002³³ (US\$188 million in 2024³⁴) and US\$11.7 million in 2021.³⁵

FIGURE 17

Oblique 3D view of the city of Goma and traces of historical lava flows



Sources: Academic³⁶

“

The East African Rift borders the DRC, exposing the eastern part of the country to frequent earthquakes.

2.5 Earthquakes

The DRC is also exposed to earthquakes in the eastern part of its territory, some of which is located on the East African Rift tectonic fault system. The eastern part of the country is located in a medium-intensity seismic zone³⁷ (Figure 18). The cities of Bukavu and Goma regularly experience earthquakes, sometimes of magnitude greater than six, which cause damage to infrastructure and residential buildings.

³² DRC: power lines rebuilt after Nyiragongo volcano eruption, Africanews, Aug-2021.

³³ The Mount Nyiragongo Eruption in Goma, United Nations Inter-Agency Response and Funding Requirement, 2002.

³⁴ After application of the 2024 PPP conversion factor (1250 vs. 144.8 in 2002 – source IMF).

³⁵ Calculations based on information available on the CERF and FTS websites.

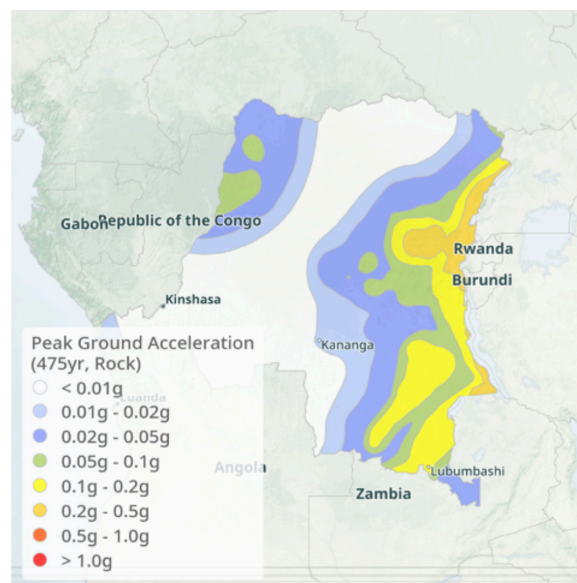
³⁶ Kervyn, M., Barette, F., Poppe, S. et al. Assessing lava flow susceptibility at neighbouring volcanoes: Nyamulagira and Nyiragongo volcanoes, Virunga Volcanic Province. J Appl. Volcanol. 13, 5 (2024). <https://doi.org/10.1186/s13617-024-00143-y>.

³⁷ Mavonga, Tuluka & Durrheim, Raymond. (2009). Probabilistic seismic hazard assessment for the Democratic Republic of Congo and surrounding areas. South African Journal of Geology - S AFR J GEOL. 112. 329-342. 10.2113/gssajg.112.3-4.329.

Although few earthquakes have had significant consequences (Figure 19), this part of the country is relatively vulnerable due to the high population density, the buildings' fragility (94 percent are made of earth, wood, and unreinforced masonry), and the lack of preparation to natural disasters.

FIGURE 18

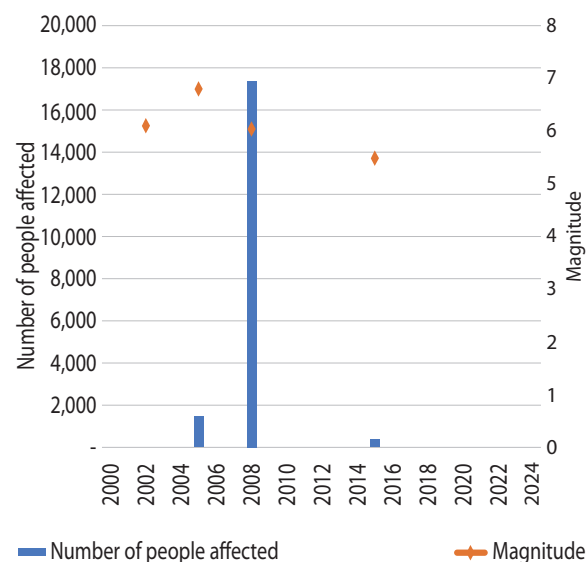
Exposure of the DRC to seismic events with a return period of 475 years (probability of occurrence of 0.21%) on hard soil



Source : Global Earthquake Model (GEM).

FIGURE 19

Major earthquakes and number of people affected between 2000 and April 2025



Source : EM-DAT

While loss and damage estimates are not yet available due to a lack of data, modeled data suggest significant financial consequences in the event of a major earthquake. Based on modeling from the Global Earthquake Foundation (GEM),³⁸ damage from a 1-in-10-year event could be as high as US\$67 million, and US\$400 million for a 1-in-50-year event.

2.6 Droughts and water stress

The DRC has been moderately affected by agricultural and socioeconomic droughts, but risks could increase with climate change. Although considered one of the richest countries in Africa in terms of water resources, the DRC is exposed to drought risks in certain parts of its territory (Figure 20), including agricultural drought risk related to its dependence on rain-fed agriculture, and socioeconomic drought risk since the limited availability of drinking water (only 26 percent of the population has access to it) and agricultural products, the production/consumption of which remains mainly local,³⁹ are leading to increased food insecurity and a rise in poverty and water-related diseases. Droughts episodes are not systematically identified and quantified due to a lack



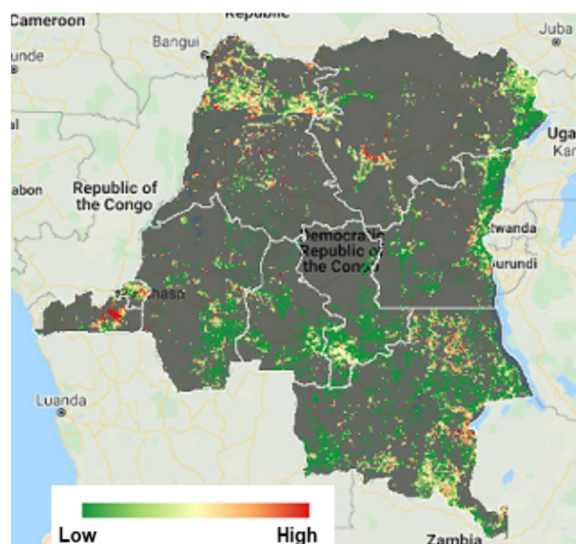
Although rich in water resources, the DRC faces an increasing risk of droughts.

³⁸ [DRC risk profile](#), Global Earthquake Model.

³⁹ See, for example, [Rice in the Democratic Republic Of Congo—A market systems analysis - Feed the future market systems and partnerships activity](#), USAID, March 2023.

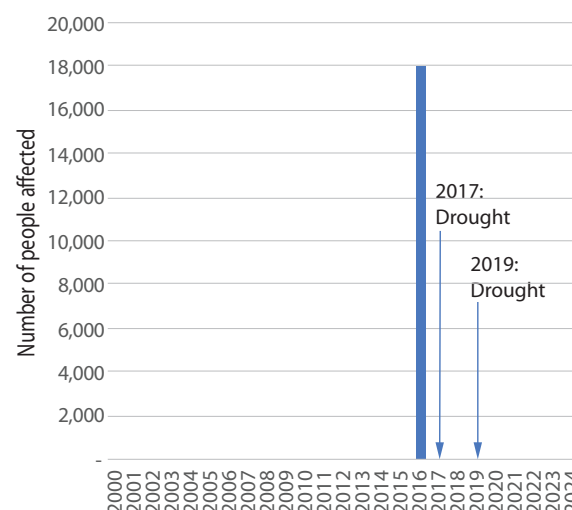
of reliable data collection, limited monitoring and early warning systems, and weak institutional capacity to anticipate and manage impacts. Various public documents have identified five significant droughts between 1978 and 2022, including three in the last 25 years (Figure 20); however, their impact and the number of people affected remain uncertain.

FIGURE 20
DRC's exposure to drought risk



Source: IWM⁴⁰

FIGURE 21
Number of people affected by droughts since 2000



Sources: EM-DAT, CIWA Program

Losses and damage from drought events are not available due to a lack of identification of these phenomena. The PNDA program (Section 4.2.2) could provide an initial analysis of the impact of drought episodes.



Wildfires are very common and their human and economic consequences are hard to measure.

2.7 Wildfires

Wildfires are very common in the DRC, mainly due to the use of wood as a source of energy, as well as slash-and-burn agriculture. Although many natural factors contributing to the spread of wildfires are present in the DRC (the existence of a dry season, a mountainous topography that promotes the rise of heat, and grassy savannah—particularly in the south-east of the country), human activity remains the main factor triggering wildfires, especially the massive use of forest biomass as a primary energy source (94 percent of primary energy sources—CCDR, 2023), the practice of slash-and-burn cultivation, and the use of fire as a hunting technique to drive game. The DRC is exposed to wildfires throughout its territory, and the equivalent of ~15 percent of

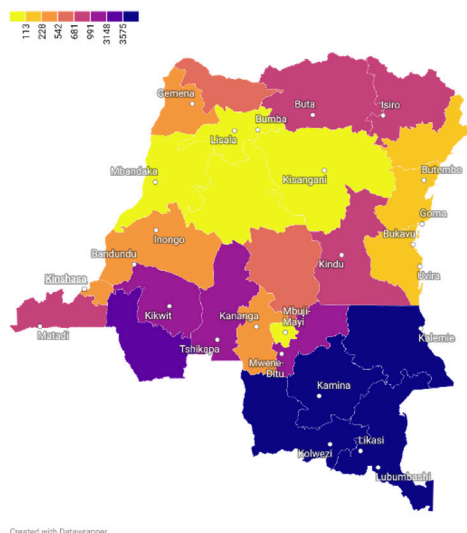
its total surface (~33 million ha) burns every year.⁴¹ Fires mostly affect areas of savannah and grassy savannah (Figure 22) which are mainly found in the southeast of the country, where the largest burned areas are recorded

⁴⁰ [Drought Resilience Profiles | Democratic Republic of Congo](#), CIWA Program.

⁴¹ [GWIS](#), June 2025.

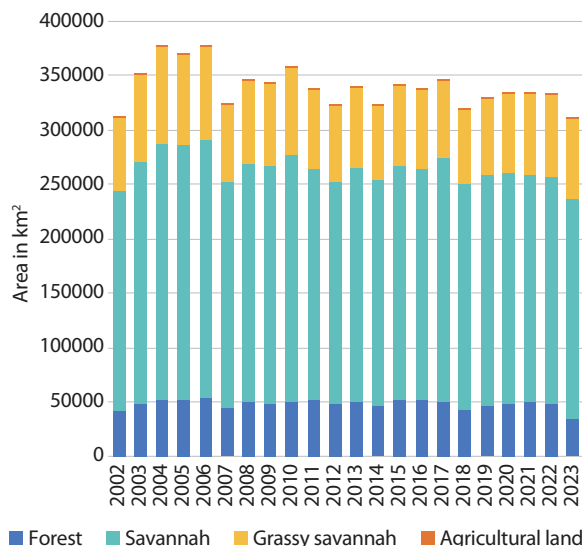
(Figure 23). However, the analysis is based on satellite data that do not permit to distinguish intentional fires and uncontrolled fires nor exclude fires from domestic/industrial origin.

FIGURE 22
Average monthly burned area by province in km² over the period 2002-2023



Source: World Bank with [GWIS data](#).

FIGURE 23
Annual burned area by type of area in km² over the period 2002-2023



Source : Copernicus

The human and financial consequences of wildfires are poorly documented, but they seem to primarily affect households. At the time of writing, no wildfires had been recorded as disasters in the available public databases. Various Congolese media outlets regularly report significant impacts on households, both material (destroyed homes) and human, while satellite data show a marginal impact of fires on agricultural land (Figure 23).

2.8 Landslides

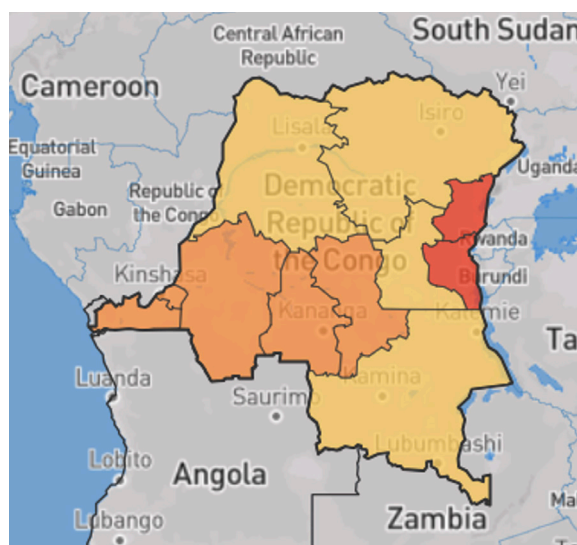
The DRC is prone to landslides in the eastern and western parts of its territory (Figure 24) due to heavy rainfall, the topography of the country, deforestation, erosion, and rapid and uncontrolled urbanization. Although the identification of landslides is limited due to their local scale and their sometimes limited consequences, studies conducted in targeted geographical areas such as the city of Bukavu attest to their frequency: 4,367 landslides were identified over the period 2000-2019.⁴² These landslides have reportedly affected 4,200 people over the past 25 years (Figure 25), but this figure is probably an underestimate.



© Alain Nkingi / Pexels

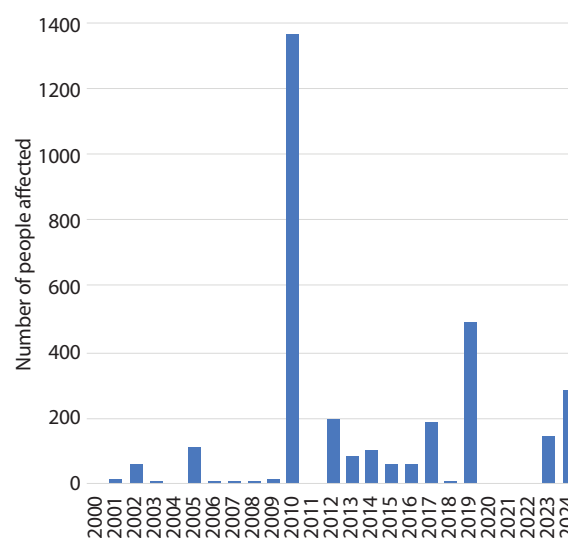
43 Depicker, A., Jacobs, L., Mboga, N. et al. Historical dynamics of landslide risk from population and forest-cover changes in the Kivu Rift. *Nat Sustain* 4, 965–974 (2021). <https://doi.org/10.1038/s41893-021-00757-9>.

FIGURE 24
Landslide risk exposure



Source: Think Hazard

FIGURE 25
Number of people affected by landslides between 2000 and April 2025



Sources: EM-DAT and NASA⁴³

Landslides have poorly documented financial and human consequences, which sometimes compound the impacts of the floods that trigger them, and appear to significantly affect households. Those occurring in densely populated areas have significant consequences, as evidenced by a landslide in Kinshasa in December 2022 that killed 140 people.⁴⁴

2.9 Vulnerable economic sectors and populations

2.9.1 Households



Households are the most exposed and vulnerable population in DRC to climate risks.

Households are the most vulnerable population to climate hazards in the DRC. This can be explained by their poor recovery capacity, often linked to precarious housing conditions, as well as very limited insurance coverage and financial resources, in a context where a large part of the population lives below the poverty line and shows low financial inclusion. They are also the category most impacted by disasters, as floods, epidemics, and landslides primarily affect residential areas and households. A survey conducted by the FAO on the shocks experienced by 2,700 households in 11 of the 26 provinces during five agricultural cycles between May 2022 and February 2024⁴⁵ reveals that, after illness

or death of a household member due to violence and conflict (for ~38 percent of households surveyed), floods are the second leading source of shocks, with 5.6 percent of households affected. Finally, internally displaced persons, who represent 6.9 million people in the DRC (one of the largest populations of displaced persons in the world), are among the most vulnerable to natural disasters due to the precariousness of their living conditions (temporary shelters, financial insecurity, uncertain economic activity and income, etc.).

⁴³ NASA Cooperative Open Online Landslide Repository (COOLR) - [https://maps.nccs.nasa.gov/arcgis/apps/MapAndAppGallery/index.html?appid=574f-26408683485799d02e857e5d9521Floods & landslides in Kinshasa: At least 141 people dead](https://maps.nccs.nasa.gov/arcgis/apps/MapAndAppGallery/index.html?appid=574f-26408683485799d02e857e5d9521Floods%20&landsides%20in%20Kinshasa%3A%20At%20least%20141%20people%20dead), Geoengineer, December 2022.

⁴⁴ [Floods & landslides in Kinshasa: At least 141 people dead](#), Geoengineer, December 2022.

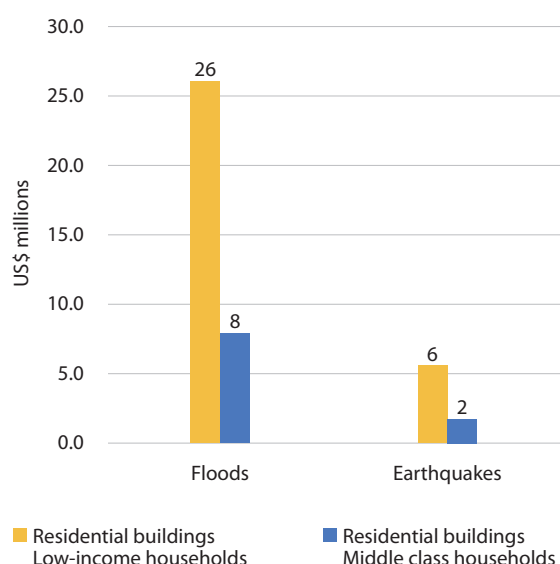
⁴⁵ [DIEM – Data in Emergencies Monitoring Bulletin, Round 7](#), FAO, April 2024.

Although the available data do not allow for a precise diagnostic due to the lack of systematic and reliable measurements, it appears that the financial situation of households is strongly affected by disasters. These losses are mainly reflected in reduced income and damage related to the destruction of homes and/or property:

- **Epidemics:** A study on the consequences of the Covid-19⁴⁶ pandemic revealed, for example, that between 60 and 67 percent of households surveyed⁴⁷ between August 2020 and January 2021 suffered a drop in their income compared to their pre-pandemic situation. This observation was shared by 70 to 80 percent of the most vulnerable households over the same period.
- **Flooding:** The database provided by OCHA as part of this diagnostic reports the partial or complete destruction of 103,000 houses between 2021 and 2024 due to flooding, i.e., a loss of housing for about 12 percent of those affected.⁴⁸ Crop losses caused by flooding undermine the food security of households, which is already threatened by rising poverty and conflict,⁴⁹ and affect their purchasing power. Poor harvests lead to local shortages and sudden price increases in food products. Food items also account for a significant proportion (54 percent) of the basket of goods used to calculate inflation (CPI, IMF).
- **Volcanic eruptions:** The last eruption of Mount Nyiragongo in May 2021 destroyed nearly 3,630 houses, some of which were also the target of looting.⁵⁰ The lava flows damaged sensitive infrastructure in Goma, depriving the city of its food, water, and power supply circuits, which likely affected households' economic activity. The eruption of February 2002 destroyed 15 percent of the city of Goma (see section 2.4), leaving 100,000 people homeless.

Available models⁵¹ estimate the value of residential buildings at approximately US\$12.8 billion, of which 77 percent house low-income households, and 23 percent belong to the middle class. The average annual damage to residential buildings is estimated at US\$34 million for floods and US\$7 million for earthquakes, mainly affecting buildings housing low-income households (Figure 26).

FIGURE 26
Average annual damage to residential buildings from floods and earthquakes



Source: World Bank with GIRI/CDRI data

46 La Covid-19 et l'offre de services financiers aux populations vulnérables en DRC, FPM ASBL Elan RDC, 2021.

47 For the purposes of the survey, a random sample of 2,200 respondents was asked monthly about how they and their households felt during the pandemic. The sample of men and women came from Kinshasa, North and South Kivu, Kasai, and other DRC provinces on the impact of COVID-19 on their financial situation. Five iterations were completed between August 2020 and January 2021.

48 Over the same period, OCHA reports that 4.4 million people were affected. Since each household has an average of five people (source: [National Statistics Institute](#), 2014), it can be established that 12 percent of the affected persons (4400000/(103000*5)) also had their homes damaged.

49 For example, between July and December 2020, more than 21 million people in the DRC experienced acute food insecurity due to conflict, COVID-19, and floods. About 500,000 people lost almost all their food reserves due to flooding caused by heavy rains (IMF).

50 [DR Congo: Volcanic eruption in Goma - Situation Report No. 1, as of 25 May 2021](#), Reliefweb, May 2021; [Flash Appeal](#), UNICEF, May 2021.

51 [Democratic Republic of Congo](#), GIRI/CDRI.

2.9.2 State

The state is vulnerable to almost all identified hazards due to the dilapidated condition and poor maintenance of its infrastructure, as well as its role as a response provider to disasters. Chronic underinvestment in state infrastructure undermines the resilience and value of state assets. However, this exposure is moderate due to the presence of infrastructure on only part of the national territory, as forest cover accounts for 69 percent of the DRC.⁵² Existing infrastructure is nevertheless exposed. For example, 10.7 percent of schools, 12 percent of hospitals, and 53.5 km of main roads are located in flood zones.⁵³ The government must also provide emergency response (food aid, temporary shelters, water, etc.) in the event of a disaster, as well as support for recovery (see Section 5.1) and funding for the reconstruction of critical infrastructure that has been affected.



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The impact of disasters on the government remains difficult to quantify due to a lack of data on losses and damage, as well as the absence of systematic budgetary identification of the responses provided. According to the data modeled by GIRI/CDRI,⁵⁴ the value of state infrastructure is estimated at ~US\$39 billion, mainly in the education, water, electricity, and telecommunications sectors (Figure 27). This model calculates the average annual damage sustained by the state to its infrastructure at about US\$87 million for floods and US\$22 million for earthquakes, mainly affecting the education sector (Figure 27).⁵⁵ This damage could increase dramatically with climate change. Climate change is expected to increase the frequency and intensity of floods and, in a "business as usual"⁵⁶ scenario, average annual damage to transport infrastructure could reach US\$390 million in 2030 and US\$890 million in 2040 (CCDR, 2023). Finally, the average annual cost of emergency response for the state was modeled as part of this diagnostic and estimated at approximately US\$62 million for floods and epidemics alone (Section 5.2.1).

FIGURE 27
Estimated value of state infrastructure

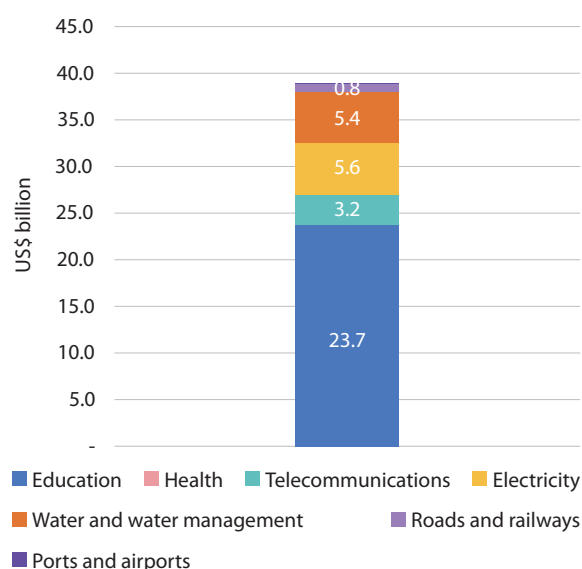
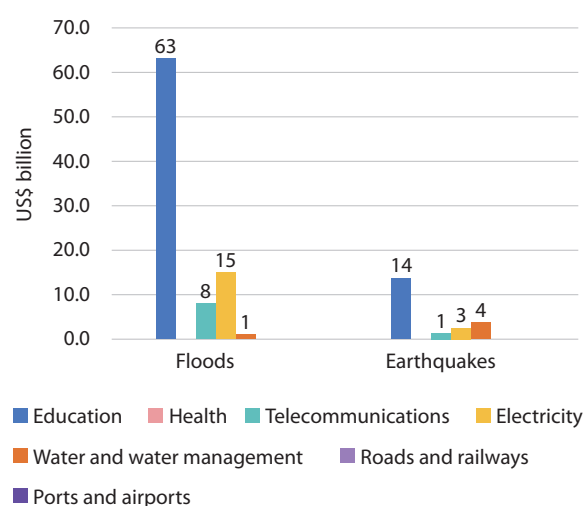


FIGURE 28
Average annual damage to infrastructure from floods and earthquakes



Source: World Bank with GIRI/CDRI data.

⁵² [Democratic Republic of Congo](#), Global Forest Watch.

⁵³ [DRC CCDRs](#), World Bank, 2023.

⁵⁴ [Democratic Republic of Congo](#), GIRI/CDRI.

⁵⁵ The average annual damage to roads caused by landslides is estimated to be about US\$40K.

⁵⁶ SSP3 7.0.

2.9.3 Small businesses

Small businesses are exposed to floods, epidemics, and volcanic eruptions, and are vulnerable due to the predominance of the informal economy, low financial inclusion, and the vulnerability of the government infrastructure they use. The informal economy provides jobs to ~89 percent of the employed population in the DRC⁵⁷ and accounts for ~82 percent of GDP. Informal businesses are mostly sole proprietorships (82 percent of Informal Production Units, IPUs) and are self-financed through individual savings. This mode of financing increases their vulnerability to shocks, since these can directly affect owners' assets. The formalization of activities only marginally reduces vulnerability, as access to credit remains very limited. Only ~7.6 percent of formal businesses finance their investments with credit (World Bank⁵⁸). Finally, formal and informal businesses both suffer from a lack of access to or discontinuity of public services. For example, IPUs do not have access to basic infrastructure (water, electricity) but use the road network to get around, whereas formal businesses use this infrastructure but suffer from very frequent power cuts (77 percent of businesses answering the same survey). Financial insecurity and lack of resilient infrastructure severely affect small businesses when shocks hit:

- **Epidemic:** Significant year-on-year revenue losses were recorded by 94 percent of companies surveyed at the end of the first Covid-19 lockdown in July 2020.⁵⁹ These losses were mainly the result of disruptions in supply chains due to international border restrictions and transport constraints.
- **Flooding:** A World Bank analysis examined the impact of flooding on urban transit companies in the city of Kinshasa. The flooding of critical road infrastructure significantly affects urban transit, forcing transport companies to make detours and lengthen their routes, generating economic losses in the order of US\$1.2 million per day on average.
- **Volcanic eruptions:** Infrastructure damage from the 2002 and 2021 eruptions led to disruptions and destruction in public services/infrastructure (water, electricity, and road outages) as well as population evacuations, resulting in losses—unquantified but likely significant—for small businesses.

The losses and damage suffered by small businesses are difficult to quantify because of the predominance of the informal sector. The GIRI/CDRI platform estimates the average annual damage from flooding to commercial and industrial buildings owned by formal businesses at US\$111 million.

FIGURE 29

Estimated value of industrial and commercial buildings

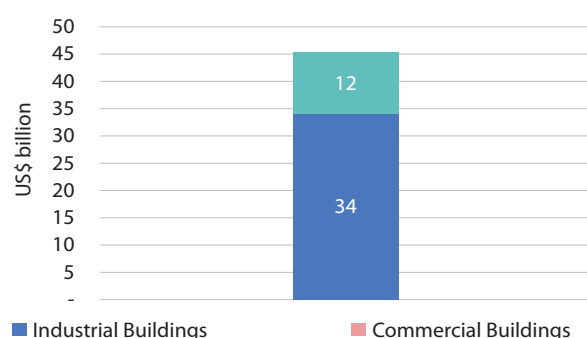
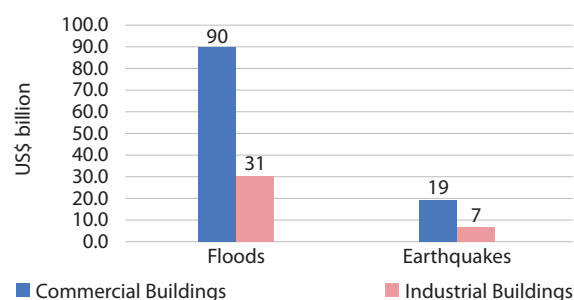


FIGURE 30

Average annual damage to commercial and industrial buildings from floods and earthquakes



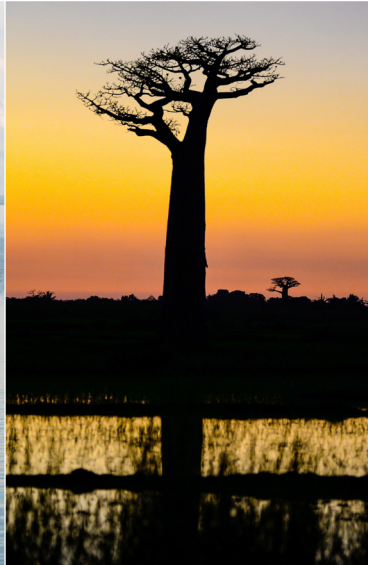
⁵⁷ [Analysis of Business Climate in LDCs - DRC](#), International Employers' Organization, March 2023.

⁵⁸ [Enterprise surveys – DRC 2024](#), World Bank, 2023.

⁵⁹ According to a study by ÉLAN DRC and the Federation of Enterprises of Congo said their revenues decreased compared to the same period last year.

BOX 3**THE IMPACT OF DISASTERS ON SMALL BUSINESSES IN MOZAMBIQUE, MADAGASCAR, AND DRC**

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Following Cyclone Freddy in September 2023, surveys were conducted among small businesses in Madagascar and Mozambique—two countries particularly vulnerable to cyclones—to assess the impact felt during climate shocks and the countries' respective adaptation capacities. Most of the small businesses surveyed operate in the informal sector. In Madagascar, all had an average of 8 permanent and 6 temporary employees, and 66 percent were headed by women. In Mozambique, 57 percent had fewer than 4 employees, and 37 percent had between 5 and 49.

The results (Figure 31) show significant impacts on small businesses, particularly on women in Madagascar who are the most affected by workforce reductions in the event of a shock (65 percent of job losses), as well as on self-employed workers whose personal assets can be seized following defaults.

In both countries, the surveys show the priority use of value-destroying strategies to cope with the impact of shocks (use of personal savings, sale of household assets and income-generating assets, etc.). These negative strategies are often preferred to external financing solutions, which small businesses consider too rigid even outside of crisis situations. The services offered by financial institutions are perceived as inadequate in the emergency and recovery phases because of their high interest rates, over-collateralization requirements (150 percent for loans to small businesses in Madagascar), absence of grace periods, demanding loan documentation, inadequate processing times, etc. In both countries, small businesses would only consider these solutions if they offered preferential (or zero) rates, grace periods, longer repayment terms, and rapid application and disbursement processes, as well as reduced collateral requirements for self-employed workers.

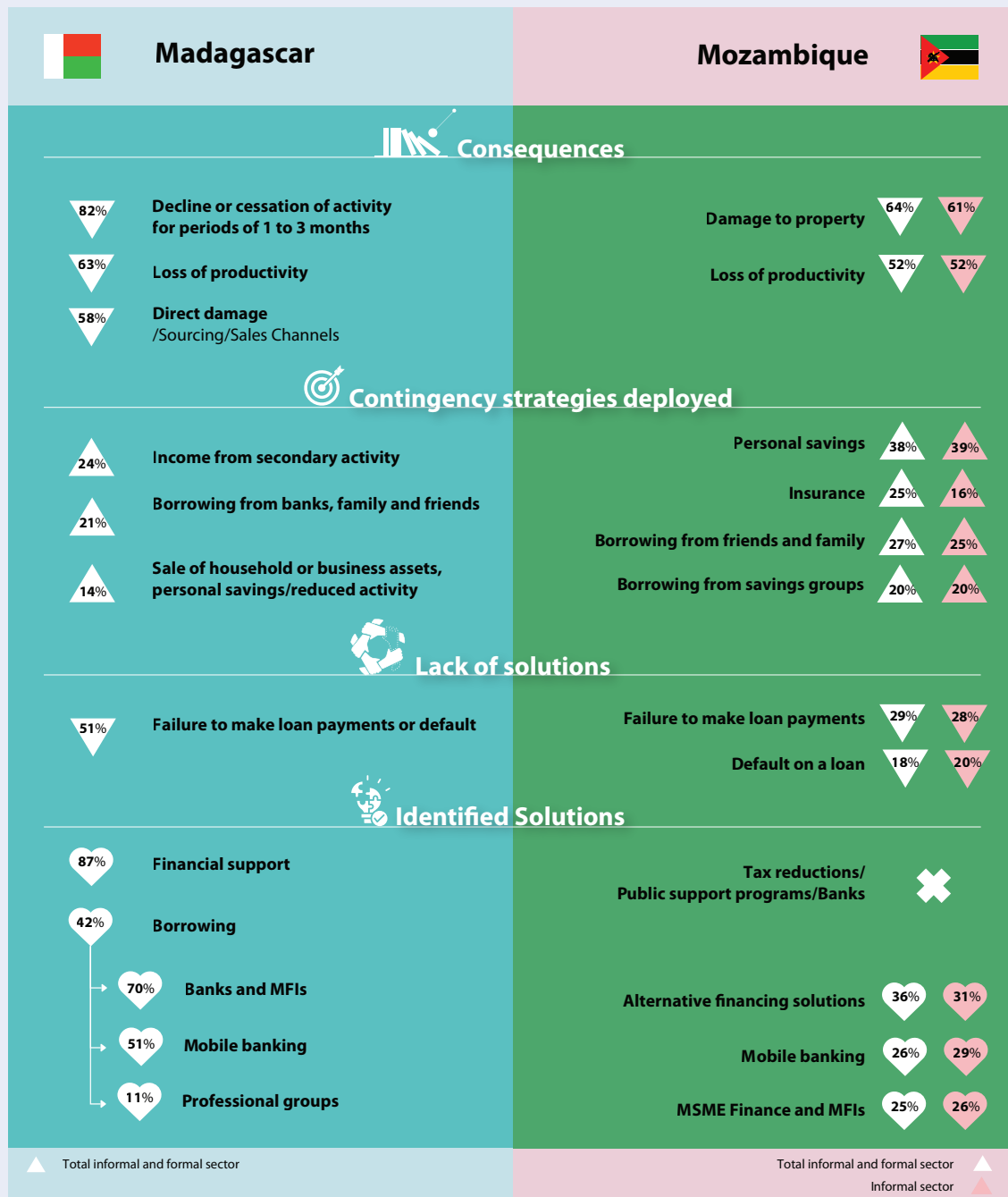
In the absence of government support and adequate intermediated financing solutions, the use of alternative financing is particularly prevalent in Mozambique, where small formal and informal businesses use low-cost credit available from community savings associations, or borrow from each other (via *xitiques* or savings groups) or from their suppliers. In Madagascar, solutions outside the traditional financial system appear to be fewer, which leads to the faster adoption of negative resilience strategies.

One last element mentioned in Mozambique is the dwindling supply. Repeated losses and defaults by customers following shocks have led some MFIs to withdraw their loan programs. A slowdown is also noticeable in the DRC during the occurrence of shocks (Covid-19, volcanic eruption). Faced with a decline in profitability resulting from an increase in defaults and the deterioration in the risk profile of their clients, MFIs have been reducing their financing to small businesses.



BOX 3

FIGURE 31
Small business survey results in Madagascar and Mozambique



Source: World Bank.

2.9.4 Agriculture

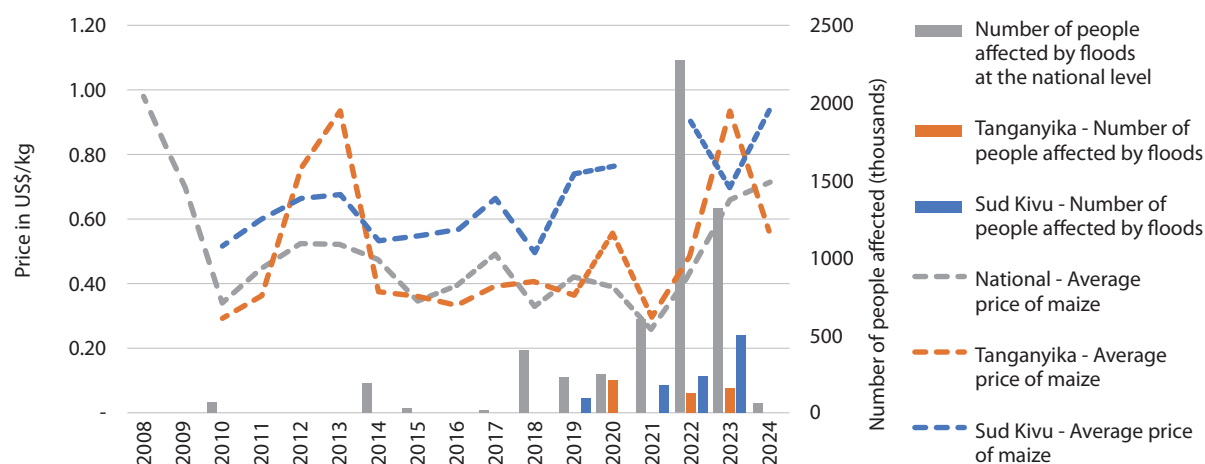
The DRC has one of the greatest agricultural potential in the world, with 80 million hectares of arable land and 4 million hectares of irrigable land, of which only 10 percent is currently exploited (FAO), mainly due to the lack of infrastructure for transporting crops. The agricultural sector employs 75 percent of the DRC's population, including 53 percent in primary agriculture,⁶⁰ and accounted for 34.6 percent of GDP in 2019.⁶¹ Subsistence farming predominates, with households selling their surpluses on local markets, which are virtually the only source of supply for the population. As a result, even the slightest fluctuation in supply—whether related to conflict or natural disasters affecting production areas—quickly puts pressure on the food system and can trigger or worsen food insecurity, which affects 66 percent of the DRC's population⁶² (including 22 percent in Phase 3+ crises).

“Shocks affecting agricultural areas are likely to disrupt the production and production system food distribution and increase food insecurity”

The agricultural sector is exposed and vulnerable to flood and drought risks. The sector's exposure to hazards varies significantly across the territory, given the size of the country,⁶³ but is expected to increase with the effects of climate change (CCDR, 2023). For instance, about 1 percent of cultivated arable land is estimated to be destroyed by floods each year.⁶⁴ More broadly, agriculture is vulnerable due to the lack of irrigation systems (which cover only 5 percent of crops), the size of the plots, and poor soil management. For the purposes of this diagnostic, a summary analysis (Figure 32) was conducted in two provinces (Sud Kivu and Tanganyika⁶⁵) in order to analyze the potential historical impact of floods on the price of maize, which is considered a staple food in the DRC, particularly in the province of Tanganyika where it is the main crop. Comparison with the province of South Kivu, also affected by flooding, helps to understand that other factors, such as conflict, can also affect food prices.

FIGURE 32

Changes in the average price of maize and number of people affected by flooding at the national level and in the provinces of Tanganyika and Sud Kivu



Source: World Bank with FAO, EM-DAT, UNOCHA data.

NB: The average price is calculated using monthly data collected from various markets in the two provinces.

60 [Democratic Republic of Congo's Agrifood System Structure and Drivers of Transformation](#), CGIAR, July 2023.

61 The main crops are cassava and maize.

62 [DRC – Acute Food Insecurity Analysis](#), ICPC, June 2025

63 The DRC has an area of 2,345,410 km². It is the 11th largest country in the world and its area is the equivalent of two-thirds of the European Union.

64 [IMF: Democratic Republic of Congo. General Questions No. 22/211](#).

65 These provinces were selected because of the continuity of the maize price series in their markets and the depth of available history.

An analysis of the impact of the floods that occurred between November 2023 and January 2024 was also produced by FAO using satellite imagery.⁶⁶ It concludes that floods have a relatively marginal impact on agricultural land, mainly because they occur in areas of the provinces of Kinshasa and South Kivu which account only for a small share of cultivated land, with the majority located in these two provinces as well as in North Kivu and Haut-Katanga. These floods also had unquantified consequences on livestock farms in areas with high densities of livestock (goats, sheep).

Due to a lack of data, losses from the agricultural sector are difficult to measure, especially for episodes of water stress/drought. Although the Ministry of Agriculture has confirmed that droughts and floods do affect agricultural production, there is no data to support this finding.⁶⁷ The IMF notes that physical risks affecting agricultural land are a factor in the deterioration of the Congolese economy and that approximately 1 percent of cultivated arable land is destroyed by floods each year.⁶⁸



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⁶⁶ [Flooding in the Democratic Republic of Congo, 2023–2024](#), FAO, January 2024. The floods caused an average of 39 square kilometers of agricultural land to be submerged over three days at the height of the event.

⁶⁷ This is likely due to the low occurrence of drought episodes or their localized nature (see the section on droughts and water stress in the DRC risk profile).

⁶⁸ [General Questions DRC](#), IMF, July 2022.

3

INSTITUTIONAL AND REGULATORY FRAMEWORK



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3.1 Institutional framework

3.1.1 Regional actors

At the regional level, the DRC belongs to the Economic Community of Central African States (ECCAS), the Southern African Development Community (SADC), and the East African Community (EAC), as well as the African Union. All these organizations have disaster risk management objectives.

FIGURE 33

Mapping of regional stakeholders



3.1.2 National actors

The main actors in the Republic active in the areas of Disaster Risk Reduction (DRR), Disaster Risk Management (DRM), and Disaster Risk Financing (DRF) have been identified in collaboration with the relevant ministries. The purpose of this mapping (Figure 34) is to identify the main actors involved in each phase, in particular those active in risk response and financing.

To date, the DRC does not have a multisectoral regulatory framework to clarify the roles and responsibilities of the various actors involved in disaster preparedness and response. There is currently some institutional fragmentation, with individual ministries tending to act in isolation and to rely on their own financial resources. In addition, there are several entities whose mandates appear to overlap in

terms of coordination (National Framework for Humanitarian Cooperation, CSN-GHC, DGSI, DPC, CPAU),⁶⁹ emergency response activities (MASAHSN, MISA, humanitarian organizations, etc.), and reconstruction of public infrastructure (MITP, sectoral ministries). In practice, this fragmentation leads to increased operational costs and is likely to affect the effectiveness of the operational response. Based on the interviews conducted as part of this diagnostic, the chart below lists the entities involved in the financial and operational response and their respective mandates.

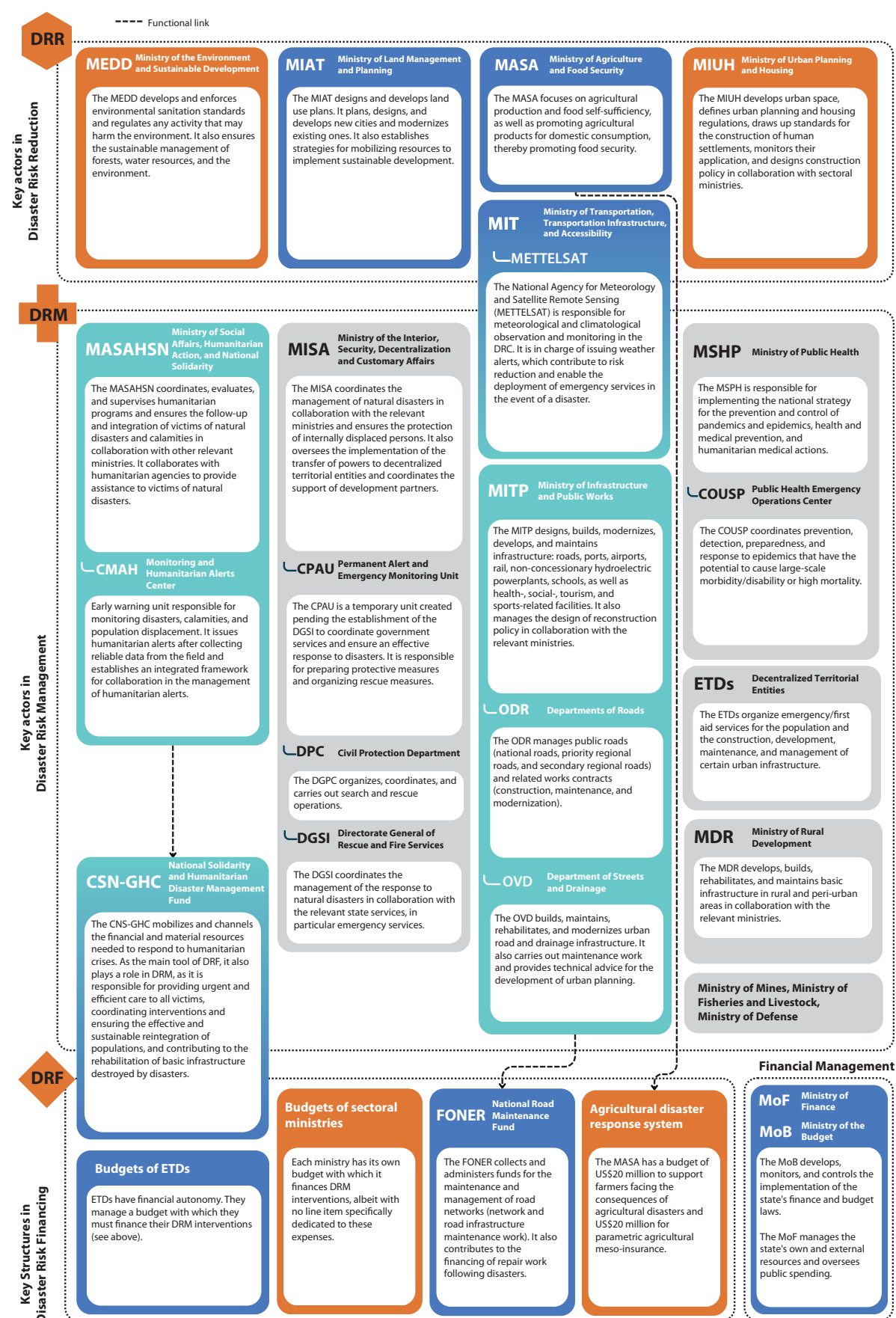
It should be noted that the government has recently adopted a national disaster risk management policy for 2025-2030, as well as a decree to institutionalize it. This work falls within the framework of the IMF's Resilience and Sustainability Facility (RSF) and is expected to clarify the institutional framework for disaster response.



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⁶⁹ Informal platform belonging to the MISA.

FIGURE 34
Mapping of national actors



The proposed descriptions reflect only part of the responsibilities of the various ministries—those related to DRR/DRM/DRF—as described in the Ordinance of 22/008. The missions of these entities have sometimes been reformulated to inform the reader of their positioning.

3.1.3 Technical and financial partners

The DRC benefits from the support of many technical and financial partners who play a key role in disaster response:

FIGURE 35
Mapping of technical and financial partners

Trust Funds and Donors	Private Sector	International Organisations	Foundation and NGO
United States, Germany, United Kingdom, Sweden, Canada, Belgium, Netherlands, Norway, Switzerland, Japan, Ireland European Union (EU) Agence Française de Développement (AFD) Global Shield	Zep-RE AXA Climate Insurance Development Forum (IDF) Global Risk Modeling Alliance (GRMA) ARC, Pula advisors, Gallagher RE...	World Bank International Monetary Fund African Development Bank United Nations and specialized agencies	Start Network DRC Hub Red Cross and DREF Médecins sans frontières, Médecins du monde, ACTED, World Vision International, Première Urgence Internationale, Global shelter cluster...

Donors supporting the DRC in disaster response include:

- **The European Union (EU)**, which is funding humanitarian response through the European Commission's Civil Protection and Humanitarian Aid Operations program by providing ~EUR308 million in aid since early 2023. The EU is also supporting the DRC through a EUR424 million program aimed at strengthening the resilience of certain sectors (transport, energy, health, agriculture, and biodiversity).
- Several donors such as **Belgium, Canada, Germany, the France, Ireland, Japan, Norway, Sweden, Switzerland, the Netherlands, the United Kingdom, and the United States** support the DRC in disaster response, through trust funds and contributions to the DRC Humanitarian Fund, focusing on humanitarian aid, health, education, and governance. **The French Development Agency (AFD)**, in particular, is currently financing a EUR1.5 billion program to strengthen the resilience of certain key sectors such as health, agriculture, energy, education, and women's empowerment. Recent agreements focus on financing infrastructure and social projects. AFD has implemented a EUR15 million project to strengthen the resilience of those urban districts in Kinshasa that are exposed to flooding and health risks.
- **The Global Shield against Climate Risks,⁷⁰ a multi-donor trust fund that aims to** strengthen the financial resilience of vulnerable countries to climate and disaster shocks. In the DRC, it is co-financing the establishment of a national agricultural insurance program under the National Agricultural Development Program (PNDA) project implemented with World Bank support.

International organizations active in disaster response include:

- **The African Development Bank (AfDB)**, which responds to disasters with ad hoc humanitarian support. It also finances major infrastructure projects, particularly the rehabilitation of road infrastructure (e.g., the development of the Bukavu-Goma road for US\$98 million) and the improvement of access to basic social services.
- **The United Nations (UNDP, OCHA, IOM, WFP, FAO, UN Women, UNICEF, WHO, UN-Habitat, UNHCR, etc.)** are the main vehicles for emergency response in the DRC. These agencies provide direct support to the response, technical assistance, and political and financial advocacy in a wide range of fields, including health, agriculture, and energy. These agencies can draw on several financing

70 <https://www.globalshield.org/>

instruments such as the **Central Emergency Response Fund (CERF) or the Humanitarian Fund for the DRC**, which are multi-donor funds aimed at responding to humanitarian crises, whether related to conflicts, migration, or natural disasters (including pandemics). These funds are channeled to the various United Nations agencies implementing the humanitarian response in the DRC.

- **The IMF** has been supporting the DRC through numerous lending programs, including the Resilience and Sustainability Fund (RSF).
- **The World Bank** supports the DRC in strengthening its resilience to climate and economic shocks.⁷¹ The resilience projects that the World Bank is deploying in the country include *Kin Elenda*, which improves urban infrastructure and combats erosion in Kinshasa; the TRANSFORME project, which focuses on financial inclusion, entrepreneurship, and employment for young people and women; and the PNDA, which supports smallholder farmers (Section 4.2.2). The STEP program and multisectoral nutrition projects have reached more than 770,000 vulnerable households with cash transfers and social services, while REDISSE IV is strengthening epidemiological surveillance and the health system. The PRIUR program builds capacity in disaster risk management and reduces the risk of flooding in selected cities. Finally, the DRC is expected to join the third phase of the regional REPAIR program in 2026 to strengthen disaster preparedness.

There are many humanitarian associations and NGOs active in emergency response, and some have funding mechanisms. Among those active in DRF is the Disaster Response Emergency Fund (DREF). Managed by the International Federation of Red Cross and Red Crescent Societies (IFRC), it enables the rapid release of funds in the form of grants or loans for immediate disaster response in 191 countries and provided the DRC with nearly CHF1 million for emergency flood response in April 2025. The Start Network, through the DRF/Start Ready program, has enabled two local members and one international member to receive GBP1.1 million in order to anticipate the consequences of natural disasters.

Finally, in the private sector, Zep-RE, an international reinsurer, is supporting the DRC in re-insuring agricultural risk covered by a product designed and modeled with the support of AXA Climate. Other private sector players active in the region include the Insurance Development Forum (IDF) and the Global Risk Modeling Alliance (GRMA), which bring together public and private actors, as well as Pula Advisors, Gallagher RE, and the African Risk Capacity, with which the DRC is currently in negotiations.

3.1.4 National regulatory framework

Public financial management

The DRC has adopted a regulatory framework for identifying and assessing fiscal risks.⁷² Among the fiscal risks identified is the risk related to "vulnerability to natural disasters and health emergencies". Since 2023, a Statement on Fiscal Risks has been appended to the annual budget law (Section 3.2).

Insurance

Insurance is essential for disaster risk transfer and has its own legislative framework. Law No. 15/005 of March 17, 2015, which governs direct insurance and reinsurance operations, liberalized the sector. The Insurance Code makes several types of insurance mandatory (Section 4.2) and prohibits the purchase of insurance abroad for risks located in the DRC. The Insurance Regulatory and Supervisory Authority (ARCA), created by Decree No. 16/001 of January 26, 2016, is responsible for regulating the sector, licensing operators, and monitoring practices. In 2025, a reform of the Insurance Code was launched to integrate innovations such as micro-insurance and digitalization, and to strengthen the protection of policyholders. This reform also aims to create a Directorate General of Insurance to monitor the application of the Code.

⁷¹ Country Partnership Framework (CPF) 2022–2026. As of March 2025, the World Bank has an active portfolio of \$7 billion across 18 national projects and two regional projects.

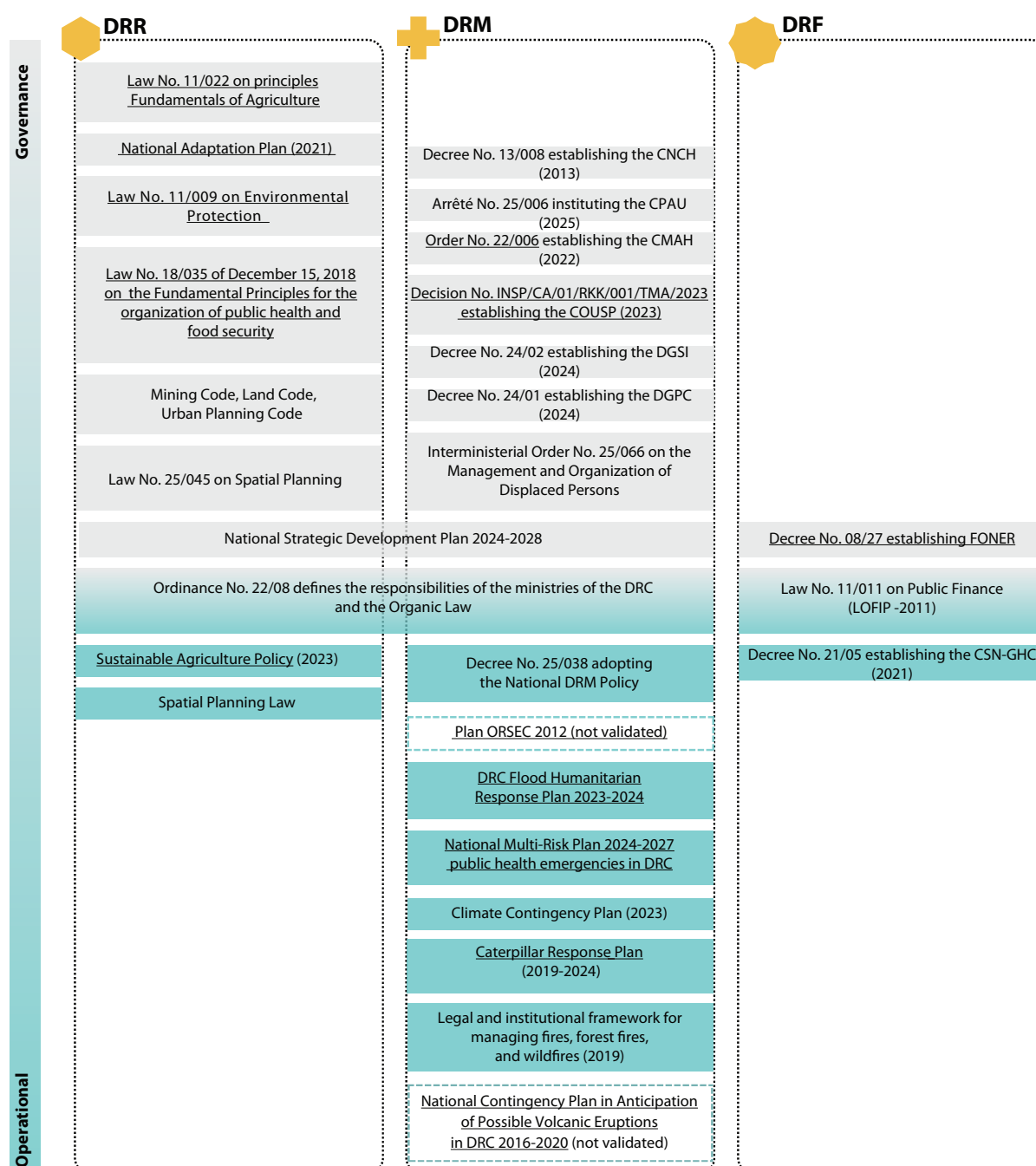
⁷² [69. Decree No. 22/37 of October 29, 2022 on Fiscal Governance.](#)

Coordination of the response

Although the numerous texts defining the responsibilities of ministries and public entities do not provide the necessary clarity for actors to organize the response, the DRM policy adopted on November 29, 2025 by decree (No. 25/038) by the government should clarify their roles. Numerous laws and regulations govern disaster risk management from a governance standpoint, as well as from an operational perspective with contingency plans (Figure 33). This multi-layered legislative and regulatory framework, along with the absence of specific legislation, prevents clear organization and an effective coordination mechanism (Section 3.1.2), and may hinder the proper functioning of existing mechanisms due to the lack of consistency between the mandates of the various entities involved in the response. However, once implemented, the DRM policy drafted by the MISA should clarify the roles of each entity.

FIGURE 36

Main laws and regulations governing DRR/DRM/DRF



The arrangement adopted to present the various legal and regulatory texts does not reflect the place of those texts in the hierarchy of sources of law.

The Republic has various response plans in place, but although these are available online, not all have been approved by the government. The government has sectoral plans to organize the response to different types of disasters, but some key plans available on the Internet, despite their legitimate appearance (ORSEC Plan, Volcanic Eruption Management Plan), have not been validated by the government, which can create confusion for anyone who refers to them, including within the administration.

3.2 Data collection and management

“
The DRC lacks a centralized system for recording and quantifying the financial losses and impacts associated with disasters.

In the DRC, systems and methodologies for assessing and recording disaster-related losses and damage are still in the development phase, which limits the understanding of risks. Data are fragmented⁷³ and often included in sectoral reports, ad hoc studies, expressions of needs, and annual reports (e.g., the annual reports of the CSN-GHC, and the Quarterly Emergency Crisis and Disaster Management Plans from the Directorate of Civil Protection⁷⁴). This fragmentation, along with the absence of a centralized and exhaustive census database, hinders the creation of an uninterrupted memory of the impact of disasters. The MISA database, one of the most comprehensive available, could be made more reliable⁷⁵ and automated with a user input interface, a reporting process, and a dedicated methodology. It does not currently include the financial impact of disasters, which could be partly fed by the financial needs assessments produced by the government with the support of

development partners (*Rapid Needs Assessment or Post-Disaster Needs Assessment*) for the various phases of DRM (Emergency, Recovery, Reconstruction).

This database could be supplemented by public databases (EM-DAT, for example)⁷⁶ as well as by those of international humanitarian organizations active in the DRC, such as the OCHA database. Some international and humanitarian organizations, such as OCHA,⁷⁷ have databases listing the disasters that have affected the country. These could complement that of the MISA, possibly automatically, so that the government has access to the most complete history possible.

Disaster-related expenditures are not currently clearly identified in budget execution documents, which hampers fiscal risk analysis. Each year, the Directorate General for Policy and Budget Programming within the Ministry of the Budget prepares an assessment of projected medium-term fiscal risks (Box 4). However, this analysis remains incomplete in the absence of a centralized database recording the consequences of past disasters, and due to the lack of identification of budgetary expenditures related to disaster response.

73 The main sources of data identified are the MoF, the MASAHSN, the CSN-GHC, the Directorate of Civil Protection, the National Institute of Statistics (INS), and the General Inspectorate of Finance (IGF).

74 The CSN-GHC collects data on the impact of disasters and produces periodic reports on the execution of state and humanitarian funds allocated for the response. It uses report cards completed by its provincial branches. It does not appear that these data are aggregated within a database. The Directorate of Civil Protection produces quarterly reports that include assessments of financial needs for crisis prevention, preparedness, and response, for the benefit of the government and humanitarian partners (Quarterly Emergency Crisis and Disaster Management Plans – PTUGCC). However, the data from these reports are not aggregated into a database either.

75 The database is currently maintained in Excel, which does not ensure its integrity and makes it vulnerable to operational errors.

76 Other public data sources can also be consulted: EM-DAT, Desinventar, UN Financial Tracking Service (FTS), etc.

77 For example, UNOCHA has, data listing historical floods with an assessment of their human and material impacts. However, data on the budgetary or fiscal impact of shocks are limited.

BOX 4**ANNUAL FISCAL RISK ASSESSMENTS**

Although there is no planning or budgeting for disaster-related expenditure in the DRC, the government does conduct assessments of the increase in exceptional fiscal expenditure that could affect the trajectory of revenue and expenditure through an annual assessment of fiscal risks. The assessments focus on the probability of occurrence and the medium-term financial impact of selected disasters (Table 1). The measures to mitigate these specific risks are identified in the Medium-Term Budget Framework and the Statement of Fiscal Risks annexed to the Finance Act.

It should be noted that some hazards are outside the traditional framework of natural disasters (shipwrecks in rivers, conflicts in the east of the country), while other key hazards are not considered (droughts, storms, pandemics) or are randomly aggregated (fire, cyclones, volcanic eruptions, and malnutrition). Some expenditures appear to be allocated to hazards in general terms (floods, landslides, etc.), while others target impacts whose cause may be multifactorial (population displacement, disruptions of children's schooling, destruction of socioeconomic infrastructure, etc.). In addition, the methodology for assessing the probabilities of occurrence and projected budgetary impacts is not explicit.

TABLE 1

Assessment of Fiscal Risks Related to Natural Disasters and Other Calamities, 2025-2027 (US\$ millions)

Risk Factor(s)	Probability of occurrence	2025	2026	2027
Flooding	6%	5.5	5.8	6.2
Landslide	3%	3.1	3.2	3.3
River runoff	2%	1.7	1.7	1.8
Mass displacement	8%	8.8	9.5	10.2
Disruption of schooling for school-age children	3%	2.0	2.0	2.1
Destruction of basic socio-economic infrastructure	5%	3.6	3.8	4.0
Shipwrecks	-	0.0	0.0	0.0
Fire, cyclone, volcanic eruption, malnutrition	-	0.0	0.0	0.0
TOTAL	27,0%	24.7	26.1	27.6

Source: Directorate General for Policy and Budget Programming, Ministry of the Budget.

3.3 Post-disaster financing process

The assessment of disaster consequences with a view to preparing the operational and financial response is not formally assigned by regulations and remains the responsibility of the relevant ministries, with no mechanism in place to ensure independent assessments. The sectoral ministries in charge of the response (MASAHNS, MISA, MSPHP) and the CSN-GHC use their local representatives to quantify response needs. These estimates are then used at interministerial crisis meetings chaired by the Prime Minister to support arbitration on needs and financing. Due to the lack of assessment by independent third parties, there are no objective accounts of the situation, which may lead to over- or underestimating response needs.

Despite normalizing efforts by the budgetary authorities, the execution of disaster-related expenditure does not systematically follow the public expenditure chain or the emergency procedures and, as a result, is not subject to the various budgetary controls provided for.

“
Disaster response
needs remain
difficult to quantify
due to the lack
of independent
processes to assess
them.

In 2023, the Court of Accounts of the Republic noted irregularities in the execution of urgent expenditure related to natural disasters⁷⁸ response. Most of the time, these payments are made on direct orders from the Minister of Finance to the Central Bank of Congo (BCC) without following the regulated emergency procedure or the public expenditure chain which would subject them to the various controls provided for (in particular through the issuance of a Computerized Payment Order). The orders thus accumulated are placed in the Public Treasury suspense account at the BCC before being adjusted en bloc at the end of the fiscal year by order of the Ministry of Finance, without any support documents being provided. These practices do not ensure the transparency needed to control the proper use of public funds for response purposes (Section 4.1.2) and accentuate the deficiencies in the traceability of disaster-related expenditure (Section 3.2). Since the observations made by the Court of

Accounts, the fiscal authorities have reported undertaking major efforts

to strengthen regularity, transparency, and traceability in the execution of emergency expenditures related to natural disasters. Reliance on ex post regularization, the absence of a rigid regulatory framework, weak traceability, and the lack of interinstitutional coordination remain major obstacles.

The DRC has measures in place to simplify public procurement rules in the event of a disaster. The law on public procurement allows the deadline for receiving applications in emergencies to be shortened to 15 calendar days, instead of 30 days for contracts requiring competitive bidding, and for purchases to be made by mutual agreement without a call for tenders in cases of extreme urgency and after authorization by the department responsible for public procurement oversight.



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78 [Interim relief NOPPCC/TKG/00/1](#) 12023 of January 12, 2023, Court of Accounts of the DRC.



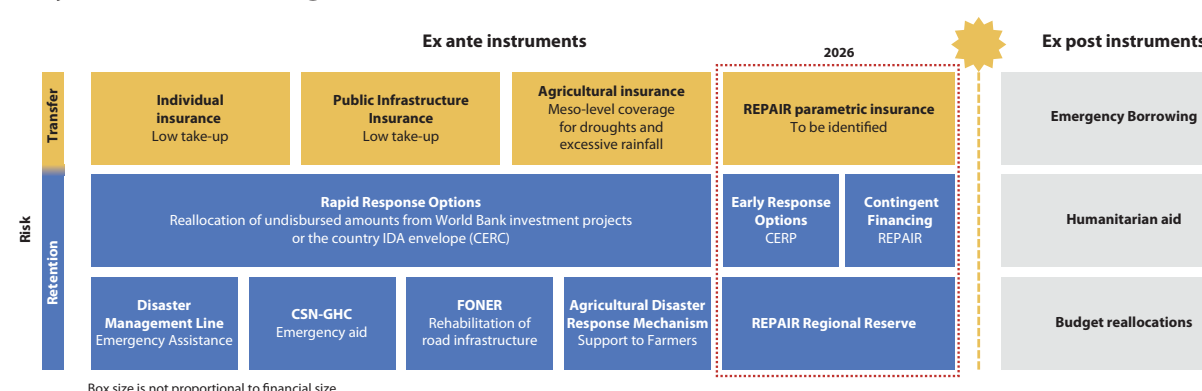
DRF INSTRUMENTS AND MECHANISMS



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The DRC has started to invest in its own financial resilience, but emergency response and recovery costs remain mainly borne by humanitarian aid, the CSN-GHC, and ad hoc budget reallocations. The DRC has had several financing instruments at its disposal since 2021, such as the CSN-GHC and a dedicated envelope for responding to agricultural disasters. However, public resources, including those allocated to DRF, appear limited and do not allow the government to intervene to the extent of its contingent liabilities (Section 5.1.). This lack of resources also affects the use of approved budgetary appropriations to finance the response, since there is low budget execution on the dedicated instruments. As a result, when a disaster strikes, emergency response and assistance to populations are delayed and rely mainly on humanitarian actors. The costs of recovery or reconstruction of public infrastructure are borne by local authorities and sectoral ministries through the reallocation of part of their own resources, or by the affected populations themselves.

FIGURE 37
"Layered" risk financing instruments in DRC



BOX 5 RISK STRATIFICATION STRATEGIES

DRF offers governments, businesses, households, and farmers a range of financial instruments that enable them to cope with the financial consequences of natural disasters and other shocks. While most governments use ex post financing (after the event has occurred), the implementation of ex ante solutions (before the event occurs) is preferable, as it limits costs and optimizes the time needed to respond to post-disaster financing needs without compromising development objectives, fiscal stability, or the well-being of the population. Using best practices and international experience, more and more countries are implementing national DRF strategies that combine several financial protection instruments.

International experience shows that to ensure optimal coverage, each DRF instrument must be tailored to a specific financing need. Emergency response requires access to small amounts of funding quickly. Financing recovery and reconstruction activities is a medium/long-term endeavor and requires larger amounts of funding.

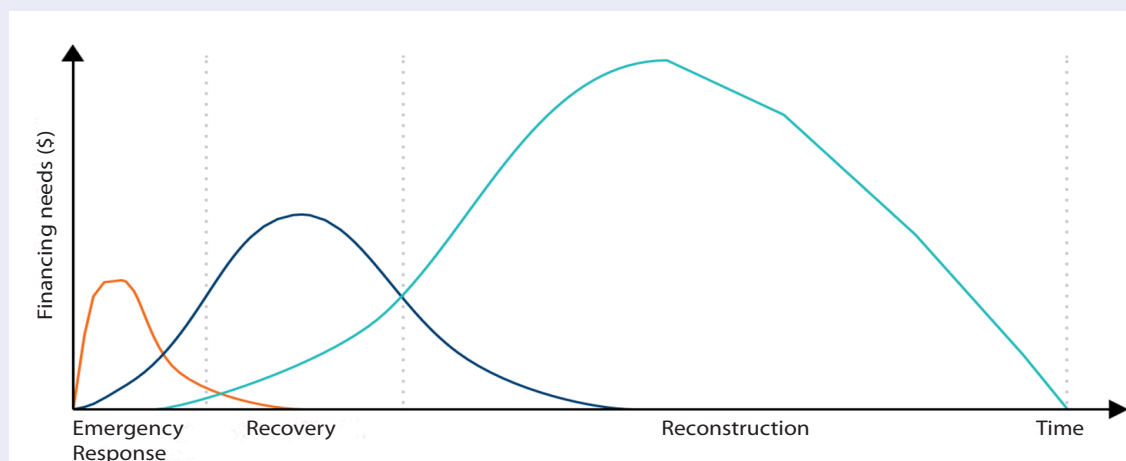


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BOX 5

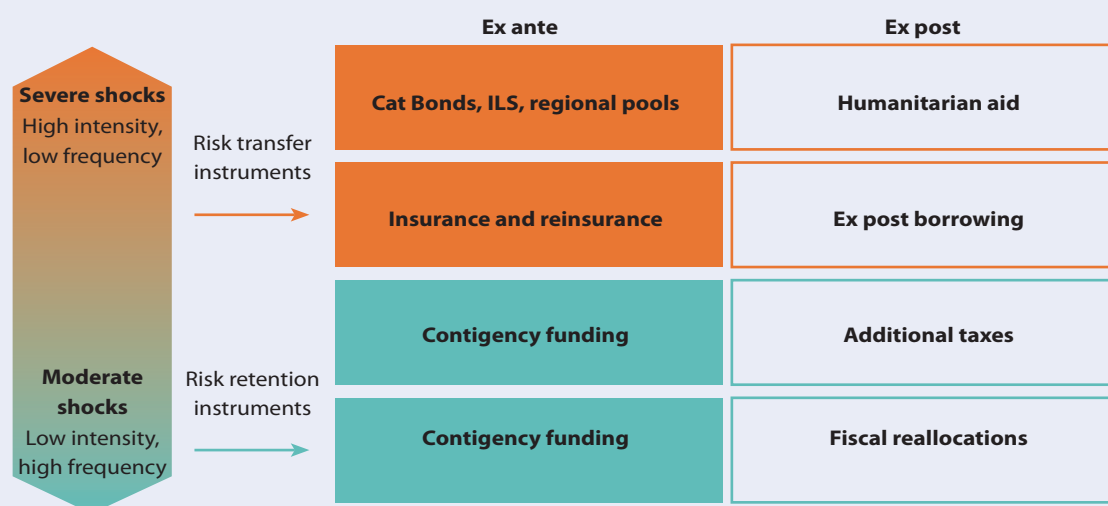
RESPONSE AMOUNTS AND PHASES



Similarly, each instrument must be tailored to a level of risk. Typically, risk transfer instruments are more suited to major shocks, i.e., of high intensity and low frequency, such as severe floods, droughts, cyclones, or earthquakes. In the case of more frequent risks, paying an insurance premium to cover these costs is not cost-effective, and risk retention instruments should be used (Figure 35).

FIGURE 38

Frequency and intensity of risk



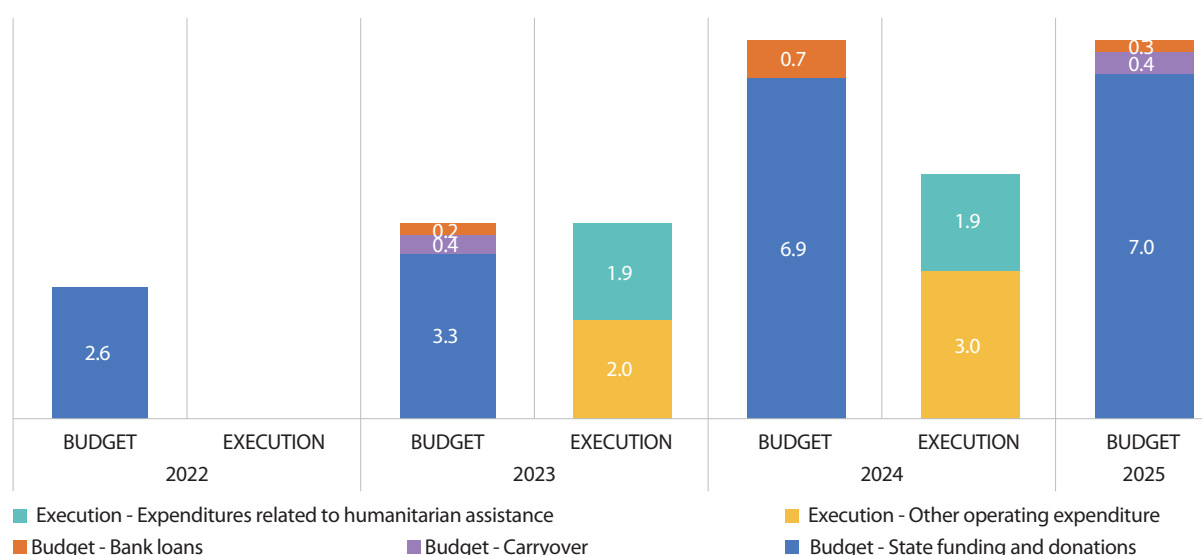
The risk stratification approach enables governments to implement a financial strategy in which each mechanism or instrument is designed to meet different liquidity needs and different probabilities. This ensures the most efficient use of public finances. Quantitative analysis makes it possible to optimize their maximum amounts, trigger thresholds, etc.

4.1 Risk retention instruments

4.1.1 The National Solidarity and Humanitarian Disaster Management Fund (CSN-GHC)⁷⁹

The CSN-GHC is the government's preferred financial instrument for funding disaster response. Created in 2021 and enjoying administrative and financial autonomy,⁸⁰ the Fund is placed under the administrative supervision of the Ministry of Social Affairs, Humanitarian Actions, and National Solidarity (MASAHSN). Its role is to provide an institutional and financial response to humanitarian crises (including natural disasters). Its financial resources, consisting of an initial government allocation, annual budget allocations, and donations, were primarily used in 2023-2024 to implement responses by the MASAHSN, the MISA, and the CSN-GHC. The CSN-GHC also used a bank overdraft to deal with a humanitarian emergency. Its annual allocations from 2022 to 2025 are shown in Figure 39.

FIGURE 39
CSN-GHC allocations from 2022 to 2025 (US\$ millions)



Sources: Annual reports of the CSN-GHC and State Budget.⁸¹

4.1.2 Sectoral budget lines

The MASAHSN is the only ministry to have a budget line dedicated to "Intervention(s) for natural disasters, calamities, and major accidents," but the cases in which this line is used are not exhaustive, and its use has declined in recent years. Based on the interviews conducted as part of this diagnostic, it appears that this line is used for many expenditures that sometimes fall outside the scope of natural disaster response (i.e., response to conflicts in the eastern provinces of the DRC), and is traditionally subject to payments under emergency procedures, sometimes without consultation with the MASAHSN. The government's intention seems to be to limit the use of the emergency procedure and to give priority to the CSN-GHC for disaster

⁷⁹ <https://csn-ghc.cd/>

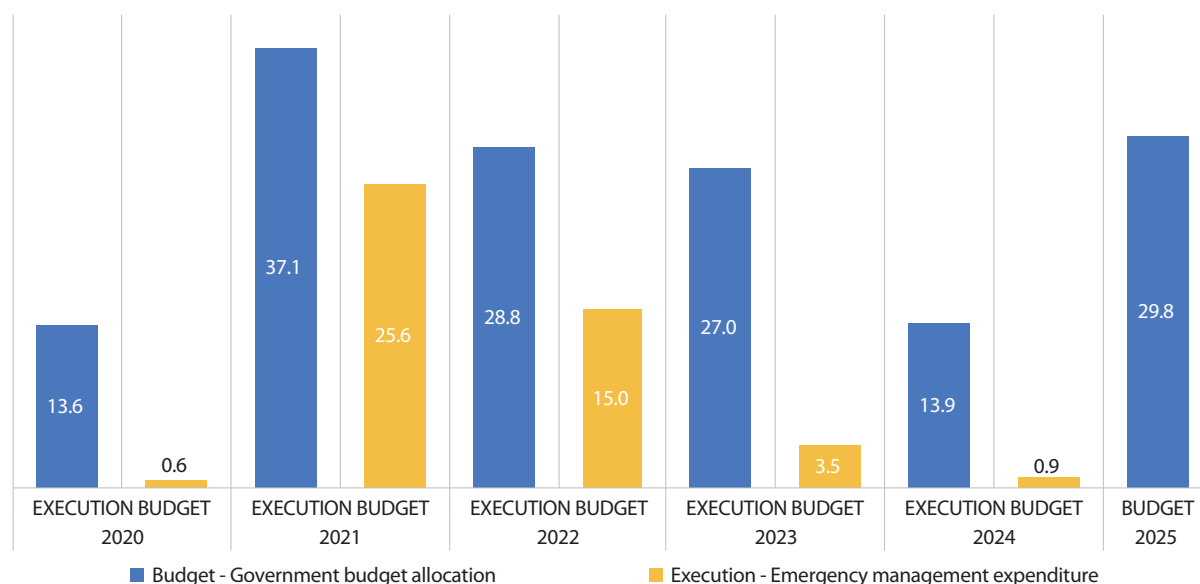
⁸⁰ Decree No. 21/05 of November 19, 2021 on the creation, organization and functioning of the National Solidarity and Humanitarian Disaster Management Fund (CSN-GHC).

⁸¹ https://www.budget.gouv.cd/wp-content/uploads/budget2025/plf2025/document_num_5_analyse_explicative_depenses_plf_2025.pdf?gl=1*nu68cr*_ga*MTYzOTUwOTcyNi4xNzQ5NTU3MjY2*_ga_KVL7TNBZWP*cZ3NDk1NTcyNjUkbzEkZzEkDE3NDk1NTgxOTckajYwJGwwJGgw

response, which explains the low use of the dedicated line of the MASAHSN (6 percent in 2024, 30 percent over the period 2020-2023). Its annual allocations from 2020 to 2025, the amount of which varies from year to year according to national priorities and risk forecasts, are presented in Figure 40.

FIGURE 40

Allocations to the disaster management line from 2020-2025 (US\$ million)



Source: National Budget.⁸²

The other sectoral ministries do not have clearly identified specific budget lines to support their role in disaster response as defined by the legal provisions (see 5.1). These ministries draw on their budgetary resources to fund certain disaster response activities. However, these budget reallocations cannot be clearly identified and quantified from public expenditure execution reports.

4.1.3 The National Road Maintenance Fund (FONER)

FONER finances road repair work and intervenes in the event of disasters. Created in 2008,⁸³ this public institution placed under the administrative and technical co-supervision of the MoF and the MITP is responsible for financing the maintenance and protection of streets and roads. Its financial resources consist of fees from customs duties, oil companies, and mixed economy companies, as well as budget allocations from the state and donor contributions.⁸⁴ In particular, FONER finances post-disaster repairs to non-private national roads in the DRC and transfers a portion to the provinces to finance the necessary repairs on provincial and local roads.⁸⁵

Its annual allocations from 2020 to 2025 are shown in Figure 41.

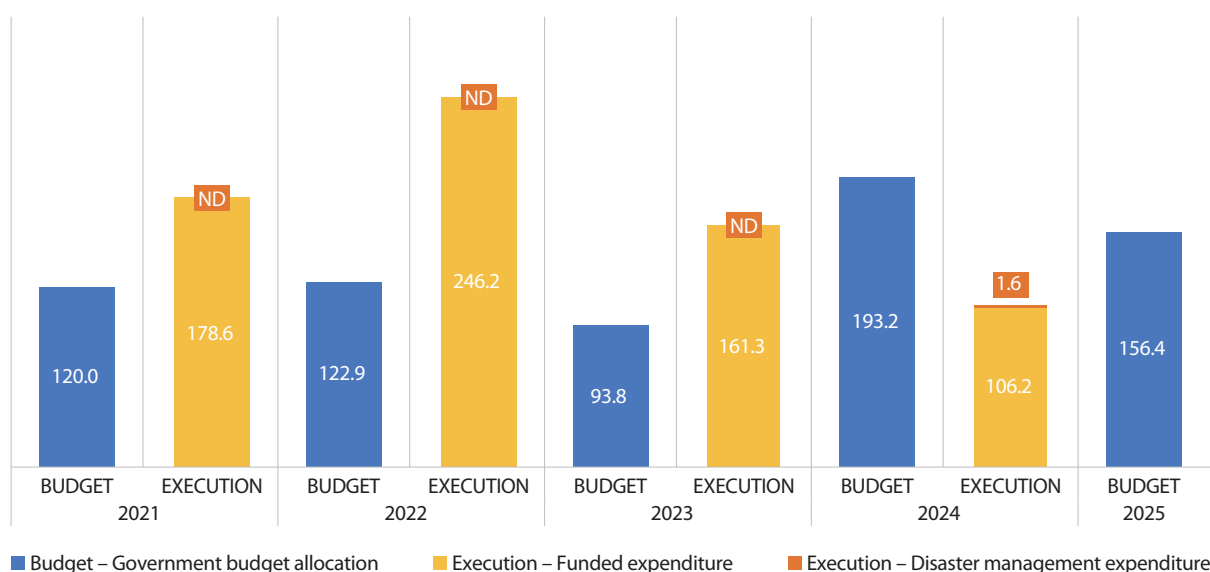
⁸² 2023, 2024, and 2025 Finance Acts.

⁸³ Law No. 08/006-A of July 7, 2008 establishing a National Road Maintenance Fund (FONER).

⁸⁴ Charges levied on onshore lubricants and fuels, including gasoline, diesel, and liquefied petroleum gas; Fees related to the operation of weigh stations; Charges on axle loads as well as various penalties related to the abusive use of the public highway, its right-of-way or its equipment, as well as weighing charges; Tolls on the national road network; Government budget allocations; Miscellaneous grants, bequests, advances or borrowings; Donor contributions.

⁸⁵ Article 4 of [Law No. 08/006-A of July 7, 2008](#) establishing [FONER](#).

FIGURE 41
2020-2025 FONER allocations (US\$ millions)



Source: State Budget⁸⁶ (NA: Not available).

4.1.4 The agricultural disaster response mechanism

The MASA is equipped with a financing mechanism to respond to agricultural disasters which could at some point become a response fund. The MASA has a reserve fund of US\$20 million under the National Agricultural Development Program (PNDA)⁸⁷ to compensate farmers benefiting from the program in the event of a drop in their agricultural yields, in accordance with the provisions of a specific climate contingency plan. This mechanism is supplemented by a three-year index-based insurance coverage for these same farmers using a US\$20 million insurance premium paid by *Global Shield*.

4.1.5 Contingency financing

For the time being, the DRC has no contingent financing instruments other than those concluded with its partners (Section 4.1.6.). Depending on the severity of the shock triggering the use of these instruments, the funds can be used for both emergency response activities and recovery or reconstruction activities.

4.1.6 Development partners' financing instruments

By early 2026, the DRC is expected to have access to three additional types of instruments, in partnership with the World Bank:

- **A reserve mobilized into a Regional Climate Risk Fund to respond to moderate to extreme shocks.** The fund is managed by ARC Ltd, which will invest in safe and liquid assets. Cash will be made available through distribution channels for response implementation upon request from the MoF to ARC Ltd.

⁸⁶ 2023, 2024, and 2025 Finance Acts.

⁸⁷ Component 1.3.

- **Contingent financing** in the form of investment project financing, available in the event of a moderate to extreme shock triggering a national state of emergency and used to fund the emergency response when reserves are insufficient.
- **A Rapid Response Option (RRO) mechanism for the reallocation of IDA project funds:** the Crisis Preparedness and Response Toolbox should allow the DRC to access the Emergency and Crisis Response Project (CERP) and thus benefit from a reallocation of up to 10 percent of the undisbursed amount of investment projects in order to finance emergency response activities in the event of a shock. The DRC is currently in discussions to access it. The maximum accessible amount was estimated at US\$418.6 million at the end of April 2025. In addition, the DRC has access to Emergency and Crisis Response Components (CERCs), which allow the country to reallocate undisbursed funds from World Bank projects to emergency response activities in the event of a shock. At the end of April 2025, there were 17 CERCs active for a maximum accessible amount of US\$6 billion, of which only a portion could effectively be mobilized in the event of a shock to avoid project restructuring. CERCs have already been activated by the government, in particular to respond to the food crisis in Kasai.

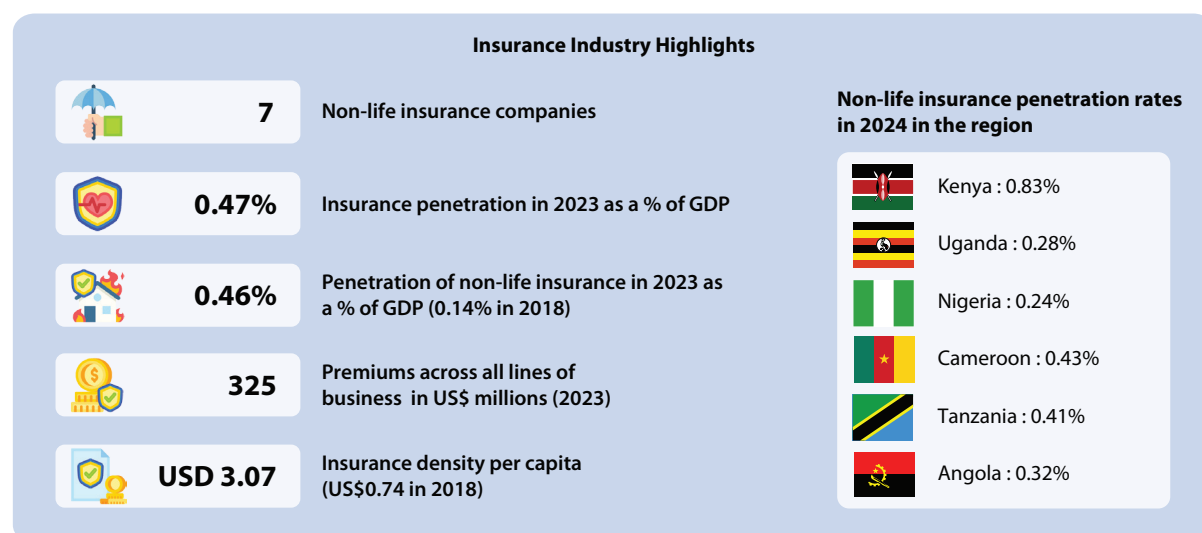
4.2 Risk transfer instruments

The adoption of insurance solutions remains marginal in the DRC, but it is showing signs of acceleration.

The market was liberalized in 2015 and had 44 licensed operators as of December 31, 2023, including 10 insurance companies (7 in the non-life sector and 3 in the life sector) as well as numerous brokers, general agents, and reinsurance companies under the supervision of the Insurance Regulation and Control Authority (ARCA). Despite remarkable growth—illustrated by a fourfold increase in the premiums collected between 2018 and 2023, up to US\$320 million—non-life insurance, which typically covers disaster risks, remains underused relative to national potential (Figure 42). The majority of the sector's risks are transferred to the international reinsurance market (62 percent of insured liabilities as of December 31, 2022).⁸⁸

FIGURE 42

Insurance industry highlights



Sources: ARCA, icons Flaticon.com.

88 Minimum retention rate by the regulatory sector of 25% - Insurance [Code](#).

4.2.1 Insurance for households and SMEs

Despite the mandatory nature of some insurance products, insurance coverage for households and SMEs remains low in the DRC, mainly because of its cost and the lack of an insurance culture. Households and SMEs are theoretically required to take out certain types of insurance, such as automobile liability insurance for individuals and fire insurance for businesses,⁸⁹ but actual enrollment is not systematic.⁹⁰ This low coverage can be explained by a limited insurance culture among the population and by the cost of insurance, which remains high in a country where 73.5 percent of the population lives on less than \$2.15 per day (2024). The sector is trying to increase financial inclusion by adapting its offering, in particular through the creation of micro-insurance products, but also by creating specific products such as index-based agricultural insurance to protect small farmers against the consequences of natural hazards (Section 4.2.2).

“The weak insurance culture and the high cost of insurance are obstacles to the coverage of households and SMEs.”

Although there are no products specifically designed to address natural hazards, some can be covered on an optional basis through fire insurance products. The Insurance Code allows insurers to exclude from fire insurance policies any damage resulting from fires caused by natural disasters. However, insurers may offer optional coverages against damage caused by certain disasters such those related to the action of the wind, including storms, lightning, hurricanes, and cyclones.⁹¹

BOX 6

THE EFFECTS OF FINANCIAL INCLUSION FOR A BETTER EMERGENCY RESPONSE IN THE DRC

The DRC suffers from low levels of financial inclusion, which hinders the population's ability to respond effectively to emergencies. Only 39 percent of the working population has a bank account—mainly in mobile currency (35 percent of the population). A majority remains excluded because of cost, distance, lack of documentation, or mistrust of financial institutions. This exclusion severely limits rapid access to resources in the event of a shock, forcing most households to rely on family, informal work, or personal savings when faced with unforeseen events, due to a lack of reliable institutional solutions.

Businesses, particularly small ones, also face major difficulties in obtaining financing, relying almost exclusively on internal funds, which limits their resilience in the face of crises. Improving financial infrastructure (branches, ATMs, microfinance) and simplifying account opening procedures are therefore essential. Greater financial inclusion would strengthen the resilience of households and businesses, facilitate the mobilization of emergency funds, and enable better risk management, thereby contributing to a faster and more effective response to economic and social shocks. In this sense, promoting access to financial services remains a key lever for the security and autonomy of vulnerable populations in the DRC.

Source: IMF-DRC General Questions, 2022; Global Findex Database 2024

89 The obligation to have fire insurance concerns "any building or building or category of buildings, for administrative, cultural, health or school use, theatres or leisure halls, investment properties, those for industrial, agro-industrial, craft or commercial use in general" (Article 210 of the Insurance Code).

90 However, subsidiaries of international groups are generally insured.

91 Articles 47 and 53 of the Insurance Code.

4.2.2 Agricultural insurance

The DRC is currently deploying a first pilot project for index-based agricultural insurance covering 80,000 farmers in three provinces against major climate shocks. Conducted by the MASA since 2025 as part of the National Agricultural Development Program (PNDA),⁹² the product covers 80,000 farmers across three provinces (Kasaï, Kasaï-Central and Kwilu) for its first year, all of whom have voluntarily registered with the National Registry of Farmers. The coverage includes drought and excess rainfall,⁹³ with the objective of ensuring timely and transparent compensation in the event of a major climate shock. The product is contracted by the state on behalf of meso-aggregating farmers' organizations (cooperatives) with a consortium of local non-life insurers who are fully reinsured, by way of a derogation from ARCA, by a regional African reinsurer. The insurance premium, amounting to US\$20 million for three years, is funded by Global Shield.



DRC Pilots
Mesoinurance Pilot
Agricultural index
covering 80,000
farmers against
droughts and
extreme rains,
funded by the
Global Shield.

The DRC has taken steps to become a member of the Pan-African Risk Management Mutual Fund (African Risk Capacity ARC), which provides sovereign and micro insurance against disaster risks.

BOX 7

THE AFRICAN RISK CAPACITY

The African Risk Capacity (ARC) is a specialized agency of the African Union founded in 2012. It aims to help African governments improve their capacity to plan, prepare, and respond to natural disasters caused by extreme weather events and disease outbreaks. In particular, it offers parametric insurance coverage at the sovereign level for droughts, riverine floods, and tropical cyclones, as well as capacity-building and emergency planning services and access to early warning systems. The ARC Group consists of two entities: the ARC Agency and the ARC Insurance Company Limited (ARC Ltd), a hybrid mutual insurance company.

Some development partners such as START Network, the World Food Programme (WFP), and Save the Children are also involved through the REPLICA program, which provides funding for additional premiums to extend the coverage of existing ARC insurance.

4.2.3 Public property insurance and parametric sovereign insurance

The DRC does not yet have parametric sovereign insurance to protect itself against the significant fiscal risks that a response to a moderate or extreme shock could generate. As a complement to risk reduction measures (see G20⁹⁴ Guidance) and risk retention instruments, which are most appropriate for the financial coverage of small to moderate shocks (Section 6.1.2), parametric insurance allows a government to quickly receive the funds provided for in the event of a shock as contractually defined with an insurer. Unlike indemnity

92 *P169021- National Agriculture Development Program* - The PNDA is being implemented under the aegis of the Ministry of Agriculture (MASA) with technical and financial support from the World Bank for a total estimated amount of nearly US\$1.5 billion over 15 years.

93 The indices used are evapotranspiration and cumulative precipitation (TAMSAT). The maximum amount of coverage is US\$20 million per agricultural season, and US\$100 per farmer. The average premium is US\$23 per farmer for an area of 0.3 hectares, but may vary according to the hydro-climatic characteristics of each region covered. The product design was carried out jointly by AXA Climate, ARCA and local insurance companies, with technical support from the World Bank. The first hedging season is underway (mid-February to mid-June 2025) and no payouts have been triggered to date.

94 *G20 Sustainable Finance Working Group input paper: Identify and address insurance protection gaps*, IAIS and World Bank, July 2025.

insurance, parametric insurance does not require the intervention of an expert to assess the compensation to be paid, but rather the exceedance of a scientifically measurable threshold to obtain the sums provided for in the contract. In the DRC, a once-in-a-century volcanic eruption or flood could require an immediate, large-scale financial and operational response for which parametric insurance would be an adequate solution.

The DRC has low uptake of insurance coverage for its infrastructure and public assets. Movable assets insured by the state include the aircraft of the President of the Republic, the vehicles of senior civil servants, etc.

4.3 Ex post financing

4.3.1 Humanitarian relief

The key actors involved in disaster response in the DRC are UNICEF, WFP, WHO, UNHCR, IOM, FAO, and the World Bank. The scale of humanitarian needs in the DRC is substantial. The country is one of the few to have a Country Based Pooled Fund (CBPF) managed by OCHA to support local, national, and international humanitarian organizations (Red Cross, UN agencies, etc.) during crises. Since 2020, the CBPF in the DRC has allocated US\$259 million to these organizations, reaching 16.4 million people. The DRC also receives CERF and bilateral allocations to address emergencies directly related to conflicts (protection, health and psychiatric emergencies, etc.) and their indirect consequences (food security, temporary shelters, etc.).

Most humanitarian funding is aimed at meeting the general assistance needs of the population and addressing national challenges such as food security, but only a small portion appears to be specifically dedicated to responding to natural disasters. Based on an analysis of information on contributions paid over the 2020-2025 period, humanitarian aid specifically dedicated to responding to natural disasters appears to have averaged US\$74 million in current terms per year over the 2020-2025 period, with more aid in 2020 for the response to the COVID-19 pandemic. The primary area of humanitarian interventions is food security (Figure 40), which remains a national challenge and is exacerbated by the occurrence of disasters and conflicts. During disasters, the first sector of intervention is health support (Figure 41).

“

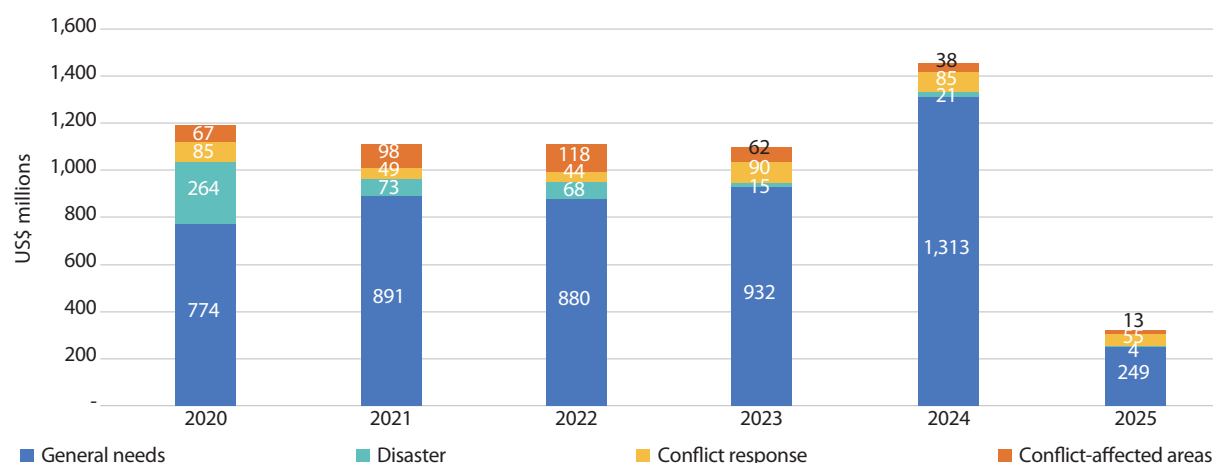
The DRC mobilizes broad humanitarian support through the CBPF, CERF, and key partners.



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FIGURE 43

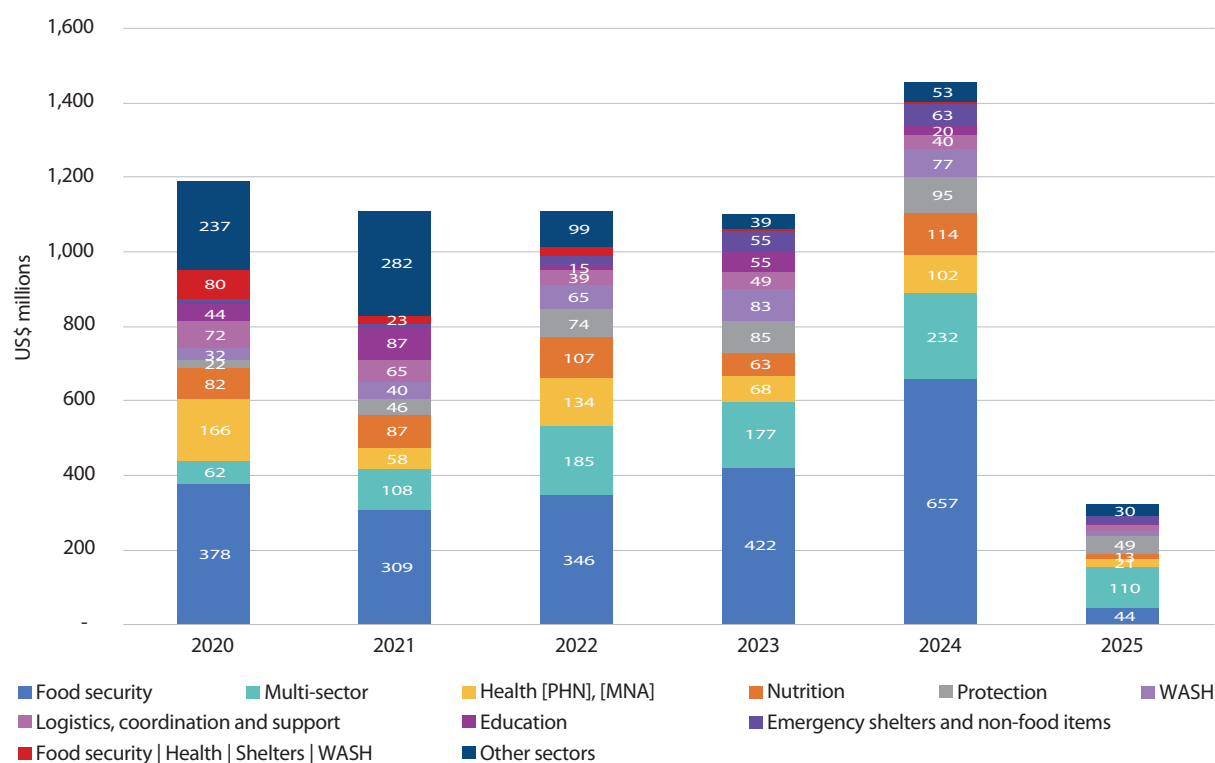
Estimated allocation of humanitarian assistance between 2020 and July 2025, in current US\$ million



Source: World Bank with FTS⁹⁵ data.

FIGURE 44

Main sectors of humanitarian aid use between 2020 and July 2025 in current US\$ million

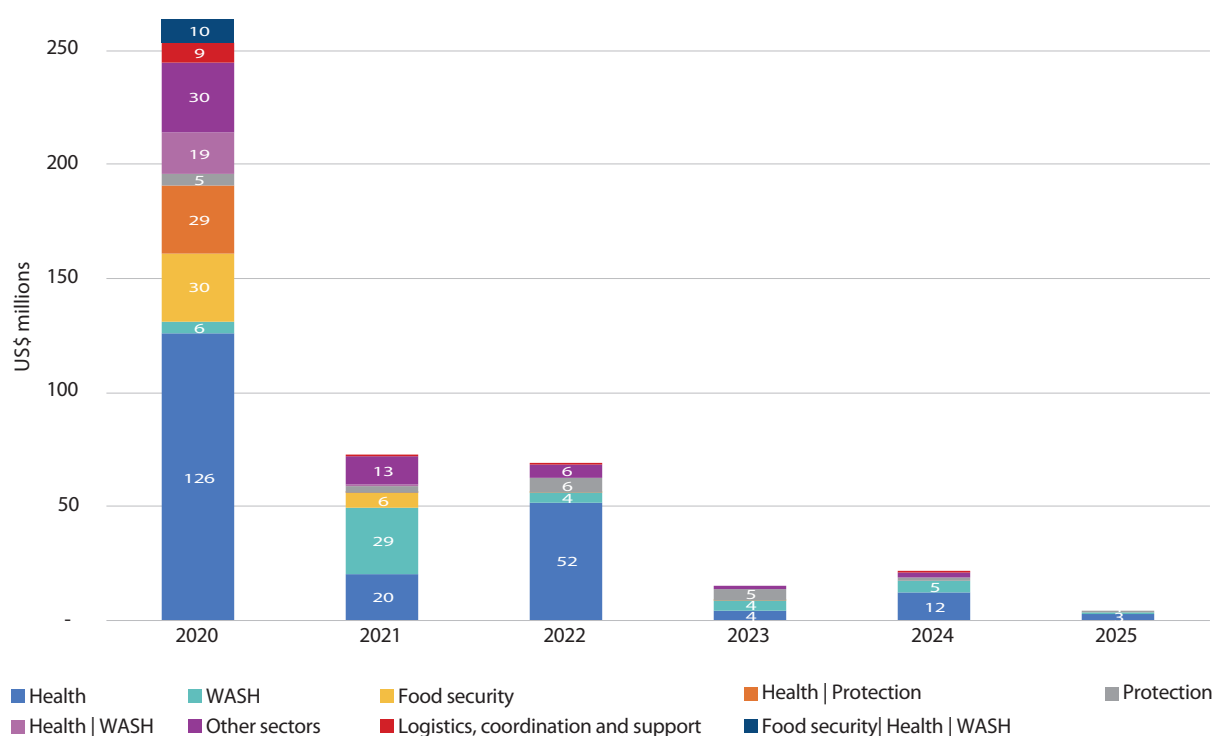


Source: World Bank with FTS data.

95 An automatic classification algorithm (logistic regression model) was used to classify 1408 entries out of the 5850 entries in the FTS database over the period 2020-2025 in order to assign them a sector according to the description available in the database. An algorithm was also used to analyze the 5,850 descriptions in the database in order to determine whether the expenditure was directly related to the response to conflicts, possibly related to the response to conflicts (aid in the affected regions), related to disaster response, or of a general nature.

FIGURE 45

Main sectors of humanitarian aid specifically dedicated to disaster response between 2020 and July 2025 in current US\$ million



Source: World Bank with FTS data.

4.3.2 Other tools

The government does not reallocate budgetary resources to finance disaster response, but favors the execution of certain budget items over others based on government priorities. This practice appears to be widespread and generates significant opportunity costs, insofar as the disaster response is carried out at the expense of other projects/expenditures that are equally important for the development of the DRC (education, infrastructure, transportation, etc.).

The DRC also uses concessional loans from international financial institutions (World Bank, IMF, African Development Bank, etc.) to deal with the consequences of disasters.

5

FINANCING GAP



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5.1 Objectives

The objective of this financing gap analysis is to quantify the contingent liabilities of the government in the context of disaster response and to identify the resources required to cover these needs. It is a critical initial step towards the development of a national Disaster Risk Financing (DRF) strategy. However, it is constrained by limited data availability and relies on a number of assumptions.⁹⁶ At this stage, it should be considered an exploratory exercise leading to an initial estimate of the orders of magnitude and key strategic options. It may be further refined to inform the government's strategic directions.

BOX 8

THE CONTINGENT LIABILITY OF THE GOVERNMENT

In practice, governments do not bear alone the financial costs of disasters, nor the expenses related to emergency operations, recovery, and reconstruction. These costs are shared between the government, local authorities, the private sector, and civil society. Government expenditures include emergency relief operations, the rehabilitation of water and drainage systems, the reconstruction of road infrastructure, public schools, and hospitals, as well as other assistance, including food aid, or expenditures for rebuilding infrastructure or public buildings.

The contingent liability of the government can be explicit or implicit. Explicit liability refers to expenditures resulting from financial commitments made by the government prior to a disaster, such as reconstructing buildings damaged by floods or compensating farmers in the event of drought. Implicit liability, on the other hand, refers to expenditures that the government covers without being legally obligated to do so, often motivated by political or moral considerations. A key step in analyzing the funding gap is therefore to determine the implicit and explicit roles and responsibilities of national and subnational governments in order to estimate the costs they would incur for an event with a given return period.



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Although the government has no explicit contingent liabilities, mainly due to the absence of law on humanitarian action and national solidarity (such law is currently under consideration) the missions of the main ministries as set out in **the regulatory and legal texts make it possible to identify their responsibilities in the operational response to disasters.**

⁹⁶ In particular, the analysis considers only two types of hazards (pandemics and floods) and relies on limited historical data. In addition, the simulation only takes into account the costs related to emergency assistance to the affected populations and therefore excludes the costs of recovery and reconstruction, as well as those related to assistance to MSMEs and the agricultural sector.

FIGURE 46
Public contingent liabilities in DRC

Emergency Response	Recovery	Reconstruction
MITP Ministry of Infrastructure and Public Works As the state's project manager, the MITP is responsible for maintaining and rebuilding all infrastructure (roads, bridges, airports, schools, hospitals, sports facilities, drainage systems, sewers, etc.) damaged by disasters, through its implementing agencies, such as the OVD (Ordinance 22/003).		
ETDs Decentralized Territorial Entities ETDs organize emergency and first aid services for the population, as well as the construction, development, maintenance, and management of certain urban infrastructure. Organic Law No. 08/016 appears to give ETDs a role in all phases of disasters.		
CSN-GHC National Solidarity and Humanitarian Disaster Management Fund The CSN-GHC provides urgent and effective care for all disaster victims, coordinates response efforts and the effective and sustainable reintegration of populations, and contributes to the rehabilitation of basic infrastructure destroyed by disasters (Decree 21/05).		
MASAHNS Ministry of Social Affairs, Humanitarian Action, and National Solidarity The MASAHNS provides emergency relief and recovery assistance to populations by monitoring and integrating people affected by disasters with the relevant ministries (Ordinance 22/003).		
MISA Ministry of the Interior, Security, Decentralization, and Customary Affairs The MISA ensures the protection of persons.		
MDR Ministry of Rural Development The MDR develops, builds, rehabilitates, and maintains basic infrastructure in rural and peri-urban areas (Ordinance 22/003).		
MSPHP Ministry of Public Health The MSPHP provides emergency medical assistance to the population (Ordinance 22/003).		
MASA Ministry of Agriculture and Food Security The MASA is responsible for phytosanitary health surveillance, vegetal quarantine management, and ensuring food self-sufficiency (Ordinance 22/003).		
MIPE Ministry of Fisheries and Livestock The MIPE is responsible for animal health surveillance, animal quarantine management, and ensuring food self-sufficiency (Ordinance 22/003).		

NB: The Ministry of Planning must be consulted in the recovery and reconstruction process.

The missions of ministries and entities as described by regulations are sometimes quite broad, suggesting vast contingent liabilities, and other times too restrictive given the actual support provided by these institutions. Without having specific operational responsibilities in all phases, some ministries and entities, such as the Ministries of Fisheries, Livestock, and Agriculture, provide support to disaster victims in their own sectors. The mandates assigned to other entities such as ETDs or the MDR appear broad and without any real correlation with the budgets available to implement them. Finally, the actual burden of rehabilitating and/or reconstructing public infrastructure is complicated by the law on public procurement.⁹⁷ This law allows the various ministries to act as contracting authorities to undertake the construction/repair of buildings within their sector, despite the sovereign mission conferred on the MITP.

The government's effective response depends on the resources available and the security context—particularly in the east of the country—which do not allow for a response commensurate with the contingent liabilities described in the texts:

97 [Public Procurement Act](#), April 2010.

- **Emergency response:** Due to inadequate funding, the government's emergency response is limited, consisting mainly of food, essential household items, and medical care.⁹⁸ Most of the support in the emergency phase is provided by humanitarian agencies (Section 4.3.1) and, to the extent of their budget and involvement, by the ministries and entities responsible for response. ETDs have highly variable budgets to carry out their missions and their response capacity depends on the available amount.
- **Recovery:** While mentioned in contingent liabilities, the response in terms of recovery appears to be limited due to budget insufficiencies. For example, the government is trying to provide rehousing solutions for disaster victims (Ministry of Urban Planning and Housing in coordination with the CSN-GHC).
- **Reconstruction:** The rehabilitation and reconstruction of public infrastructure is carried out to the extent of the funding available in the various ministries through reallocation of budgetary appropriations. Development partners are also taking on a significant share of reconstruction.

The recovery and reconstruction phases are particularly challenging to implement in provinces prone to armed conflict, which can also limit the government's response due to instability and a lack of logistics.

5.2 Quantifying the financing gap

The modeling developed for this diagnostic shows that pandemics and floods result in emergency response costs estimated at about \$62 million per year.⁹⁹ For events of moderate intensity (10 percent probability of occurrence), the intervention costs could amount to US\$ 76 million; for extreme events (1 percent probability of occurrence), they could exceed US\$ 833 million. However, the budgetary resources actually used to support the affected populations have reached a maximum of US\$3.5 million in recent years (Section 4.1), implying a financing gap of US\$58.5 million per year. If we took into account all the contingent liabilities of the government (e.g., emergency response operations, housing and public infrastructure reconstruction, support to farmers), the financing gap could be much wider.



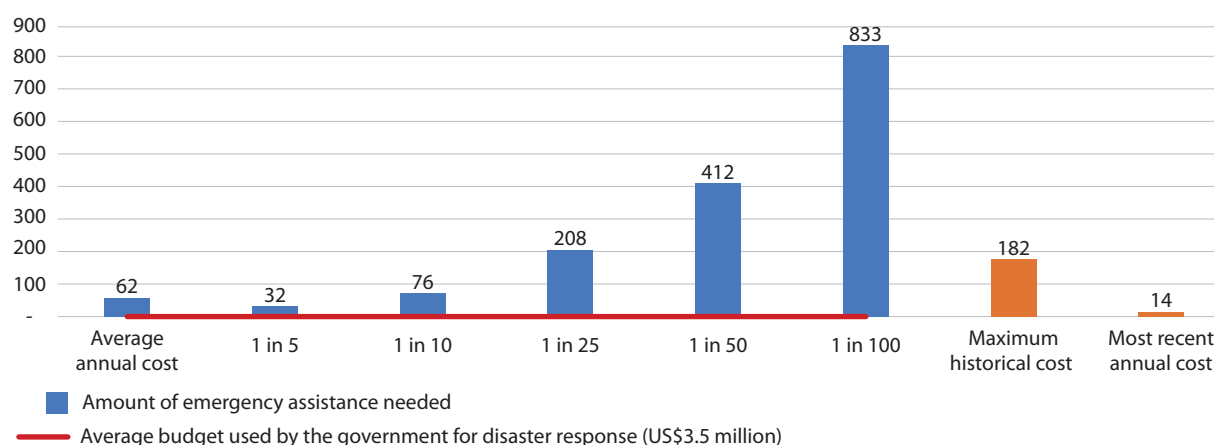
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⁹⁸ The Quarterly Emergency Plans for Crisis and Disaster Management, Directorate of Civil Protection, mention in particular for the emergency phase: essential household items, nutrition and food security/food distribution, provision of emergency shelters for internally displaced persons, support for access to basic health care, management of trauma cases and other medical emergencies, as well as Rehabilitation of health facilities and psychosocial care, WASH: Drinking water supply, construction of emergency latrines, Education: rehabilitation of schools and provision of school kits and supplies to ensure the education of children in emergency situations; Recovery and resilience: distribution of seeds and fishery inputs, construction and rehabilitation of basic social infrastructure, provision of welding kits for the resumption of socio-economic activities, assessment of losses and damage, rehabilitation of the environment.

⁹⁹ The cost of response was modeled by taking an inflation-adjusted historical average emergency response cost per person of \$80 for floods. A similar cost has been used for epidemics, although this cost can vary significantly depending on the nature of the disease (e.g., cholera, measles, Ebola, mpox, etc.) and the scope of the responses needed.

FIGURE 47

Modeled flood and drought emergency response costs for different return periods, US\$ million



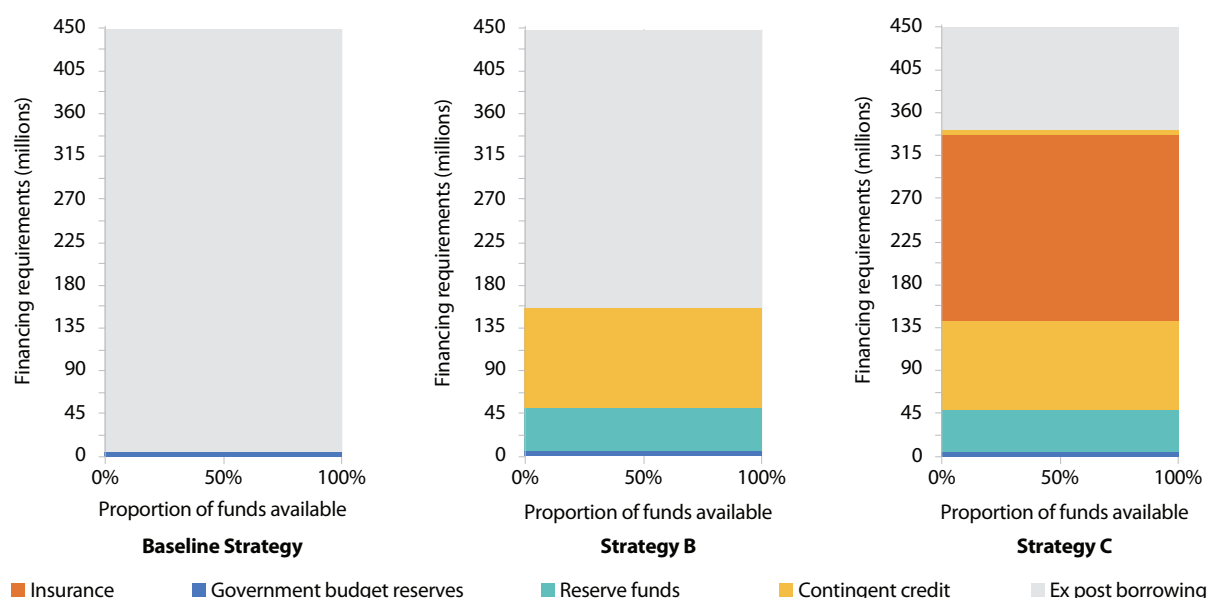
Sources: World Bank stochastic modeling with EM-DAT data and various academic and humanitarian sources for the period 2000-2025.

5.3 Comparison of different DRF strategies

In order to compare the expected impacts of different public investment approaches in DRF, three financial strategies were modeled. Each is based on a combination of DRF instruments (reserves, contingent credit, sovereign insurance) and offers a different level of coverage.

FIGURE 48

Different strategies for hedging financial risk



Sources: World Bank stochastic modeling with EM-DAT data and various academic and humanitarian sources for the period 2000-2025.

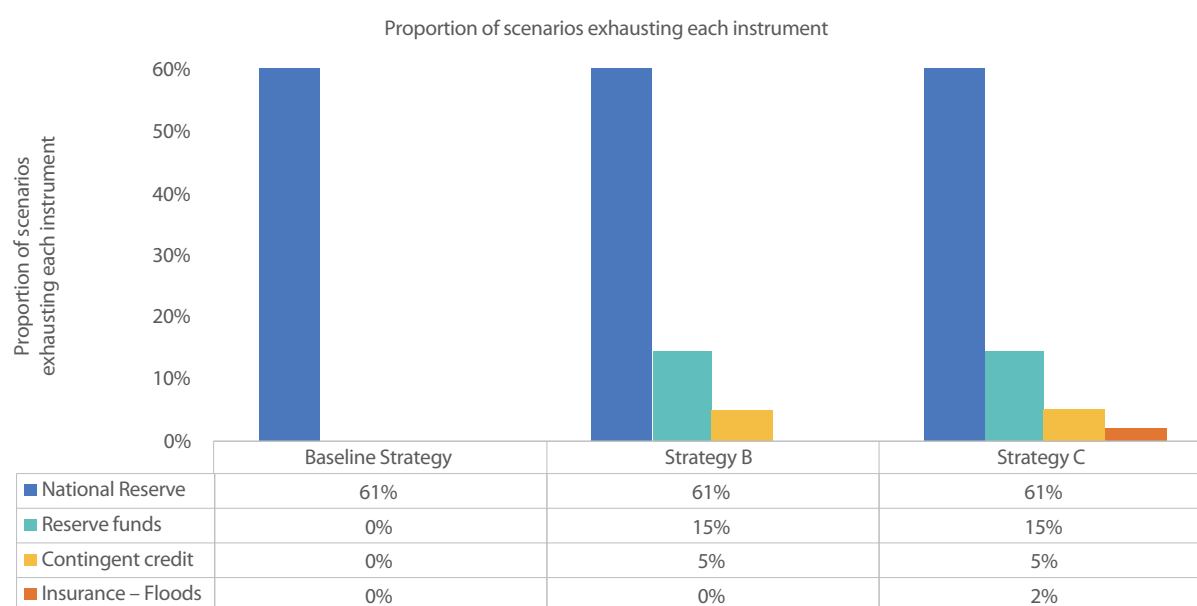
- **The baseline strategy** is based on a reserve of US\$3.5 million, which is the approximate amount of government-recorded disaster response expenditure over the past two years.
- **Strategy B** comprises national reserves of US\$3.5 million supplemented by additional reserves of US\$45 million and a contingent credit line of US\$105 million (equivalent to the REPAIR envelope).
- **Strategy C** also includes national reserves of US\$3.5 million, supplemented by additional reserves of US\$45 million, a contingent credit line of US\$95 million, and sovereign parametric insurance with a premium of US\$30 million, allowing for a maximum payout of about US\$124 million¹⁰⁰ in the event of major flooding in Kinshasa.¹⁰¹

Given the risk profile of the DRC, parametric flood insurance was used in the different scenarios.

5.4 Probability of exhaustion of DRF instruments

Our analysis shows that there is a 61 percent chance every year that the existing fiscal reserves, which are low, will be depleted, and that the government will not be able to cover emergency assistance needs in case of a disaster. Strategies B and C show that the mobilization of additional DRF instruments would lessen the likelihood of exhaustion every year (between 2 and 15 percent depending on the DRF instruments selected).

FIGURE 49
Allocation of funds by hedging strategies



¹⁰⁰ Estimates based on an annual premium of US\$6 million (US\$30 million spread over five years), and a rate on line of 4 percent. A single maximum payment is assumed.

¹⁰¹ Given the risk profile of the DRC, parametric flood insurance was chosen for this scenario, but other types of products could be considered.

5.5 Coverage of financial needs

Analysis of the simulations shows that the establishment of DRF instruments would significantly increase the funding available for emergency response, and therefore the number of people covered.

The government's current strategy relies solely on a budget line of approximately US\$3.5 million covering about 40,000 people (based on the assumptions mentioned above). The implementation of DRF instruments such as reserves, contingent credit, and insurance would increase coverage to up to 3.4 million people (Scenario C). However, due to the cost of mobilizing DRF instruments (i.e., insurance premiums, non-commitment fee, contingent credit interest etc.), the financial benefits would actually be higher in the event of a severe disaster (return periods greater than 1 in 50 years) than for a minor one (return periods lower than 1 in 5 years).

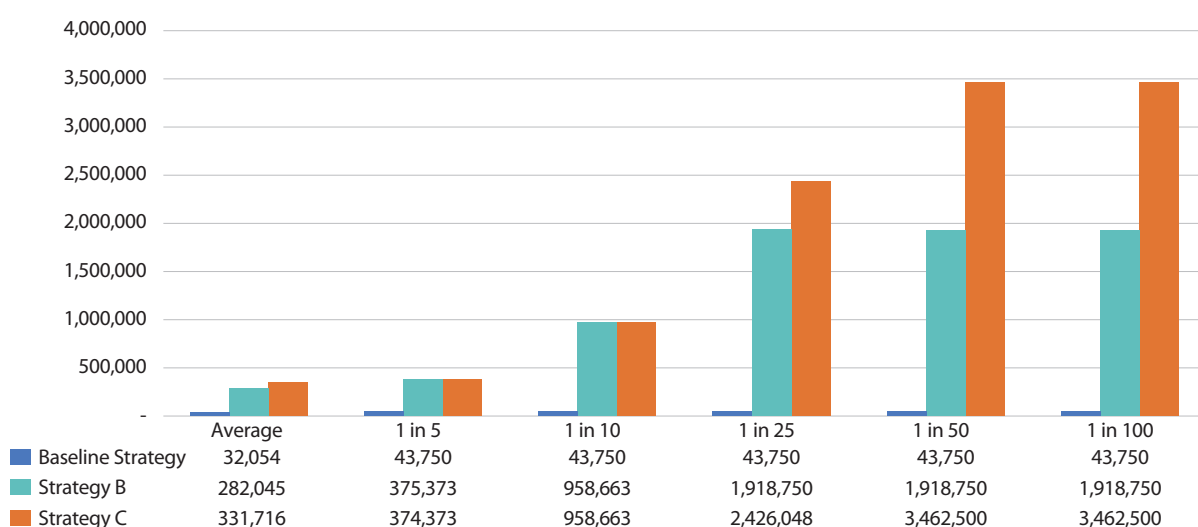
Pre-arranged financing allows the government to provide an appropriately sized response in the event of moderate and extreme shocks.

These strategies each have pros and cons:

- **Strategy B provides coverage in the amount of approximately US\$150 million maximum and assistance to ~1.9 million people.** This strategy would cover events with return periods of approximately 1 in 20 years and offer 40 times higher coverage than the baseline strategy at a relatively low cost (opportunity cost related to the mobilization of reserves, and concessional interest linked to the triggering of the contingent credit). However, it does not allow for more assistance in the event of severe or extreme shocks.
- **Strategy C provides coverage in the amount of approximately US\$270 million maximum and assistance to ~3.4 million people.** Insurance allows for a larger financial response when severe or extreme disasters occur. However, for more frequent and smaller events, the payment of insurance premiums makes strategy C more expensive and less relevant because of the low probability of compensation.

FIGURE 50

Number of persons assisted according to the severity of the shocks and the different financing strategies implemented



Sources: World Bank stochastic modeling with EM-DAT data and various academic and humanitarian sources for the period 2000-2025.

BOX 9**PROBABILISTIC MODELING AND FINANCIAL METRICS FOR DISASTER RISK**

- Modeling techniques for natural disasters were originally developed by the insurance and reinsurance industry to assess the risk within portfolios of underwritten assets (e.g., buildings). They are increasingly being used by the public sector to analyze exposure to natural hazards.
- Catastrophe risk models typically include, in addition to the exposure, hazard, and vulnerability modules described above, a loss module that aggregates information from the other three to quantify the expected losses on a portfolio of assets for the selected hazards. This probabilistic loss module is used to produce risk metrics. The key concepts and risk metrics used in this profile are as follows:
 - **Return Period.** It refers to the probability of a given level of loss following a given event, and corresponds to the inverse of the rate of occurrence of the associated loss. For example, if a loss of US\$50 million associated with an earthquake has an annual occurrence of 0.01, the return period is $1/0.01 = 100$ years. This does not mean that this loss will be exceeded exactly once every 100 years, but rather that the average period between the exceedances of this loss level over the very long term is 100 years.
 - **Average annual loss (AAL).** It corresponds to the average expected annual loss for the risks analyzed. For example, an AAL of US\$10 million associated with seismic risks means that, over a very long period, seismic risks will cause on average US\$10 million in losses to the built environment per year.
 - **Probable maximum loss (PML).** PML reflects the most significant loss that can be expected in any given return period. For example, for a 100-year return period, a PML of US\$100 million corresponds to the maximum of all losses with a probability of at least 1 percent ($1/100$) of being exceeded in any given year.



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STRATEGIC OPTIONS



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6.1 Improving the regulatory and institutional framework

Establishing a mechanism for collecting data on the financial impact of disasters.

The MISA database, one of the only available, could be made more reliable¹⁰² and automated with a user input interface, a reporting process, and a dedicated methodology (based on post-disaster needs assessments, or PDNAs). Such a database could also be supplemented with losses and damage, as well as a list of budgetary expenditures committed and budget lines used (e.g., budget codes). It could also be fed by the databases of humanitarian and other ministries through data-sharing agreements. This process would ensure consistent data entry and a more exhaustive and better quantified census of disasters affecting the DRC and would improve understanding of risks. Moreover, systematic reporting of post-disaster fiscal expenditures would allow better quantification of the government's contingent liabilities and financing gap.

Developing methodologies to improve disaster-related fiscal risk modeling in the annual Finance Act.

Developing a more comprehensive methodology by improving risk mapping (e.g., differentiating between volcanic and storm risks, integrating droughts, excluding conflicts, etc.—Box 4, Section 3.2), introducing risk modeling tools or macro modeling to improve risk quantification, and adopting budgetary tagging for disaster-related expenditures to enable comprehensive monitoring. Such a methodology would improve the government's knowledge of its own financial exposure and lead to better calibration of response instruments.¹⁰³

Following up on the clarification of the institutional framework for emergency response.

At the time of drafting this diagnostic, the respective mandates of the various actors involved in the coordination and management of emergency response were to be clarified (MASAHSN, MISA¹⁰⁴), as well as the use of DRF budgetary instruments for disaster response purposes, and in particular, the "Intervention(s) for natural disasters, calamities and major accidents" line in the MASAHSN's budget, the CSN-GHC funds, and the FONER's mandate for post-disaster infrastructure rehabilitation. The government has clarified the response framework by adopting by decree a DRM policy establishing a federation of the various ministries and entities in charge of response around the MISA. Clarification of mandates will depend on the proper implementation of the provisions of this policy and the drafting of clear operational procedures for emergency response. Discussions on the creation of an agricultural disaster response fund or a guarantee fund for farmers should explore synergies with existing or planned funds within the MASA in order to limit the multiplication of public entities and the fragmentation of the response. A more orderly response also requires greater centralization of the financial response around the Ministry of Finance, possibly through the establishment of a disaster risk financing steering committee.



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¹⁰² The database is currently maintained in Excel, which does not ensure its integrity and makes it vulnerable to operational errors.

¹⁰³ This measure is linked to Reform Measure #7 (RM7) of the IMF's Resilience and Sustainability Fund (RSF).

¹⁰⁴ This measure is linked to RM8.

6.2 Public investment in new DRF instruments

Developing a national Disaster Risk Financing Strategy.

This strategy should clearly define the priority actions, responsibilities, resources and implementation timeline for disaster risk financing based on this assessment. It would enable the government to identify the various vulnerable populations that need to be protected in the event of shocks and the pre-arranged financial instruments that should be used to optimize the response. It could be developed under the supervision of the Ministry of Finance in collaboration with international partners, and establish a clear framework for future fund mobilization. Its design should be consistent with the disaster management and risk reduction strategy.

Strengthening financial preparedness for disasters and developing the financial autonomy of response financing vehicles.

Depending on the cost-opportunity profile of each instrument, DRC could consider arranging sovereign DRF instruments that combine risk retention (reserves, contingent financing) with risk transfer (indemnity insurance, sovereign insurance) to finance shock response. A proactive approach to financing would allow the government to reduce its dependence on post-disaster financing from humanitarian partners and shift from an ad hoc response to proactive risk management. In particular, existing budgetary structures could be strengthened with such instruments (FONER, CSN-GHC, or a potential agriculture resilience fund), be financed by dedicated resources (from the mining fund¹⁰⁵ or international payments for forest protection, for example), but also develop their own resources in order to reduce their dependence on budgetary allocations.

Finalizing of the process of joining the African Risk Capacity.

The Government of the DRC could finalize the process of joining the ARC to benefit from sovereign insurance and micro-insurance products against disaster risks. Having access to risk pooling among member countries at the ARC level helps reduce the costs of access to risk transfer products for its members.

Strengthening the capacity of ARCA and the insurance sector.

ARCA's capacity in the area of sovereign risks and parametric insurance could be strengthened, particularly in the context of the development and local maintenance of proprietary disaster risk models that meet international standards. Significant work should also be done to reinforce the capacity of national insurers and develop new products (especially real estate loans with insurance against natural disasters).

6.3 Financial resilience of the government

Conducting a comparative study of parametric insurance options covering rare and extreme shocks to determine whether they are economically advantageous for the government.

These solutions can be expensive for disasters with high return periods (Figure 47) because, unlike other instruments (reserves, contingent financing), they do not guarantee payment from the insurance company.

¹⁰⁵ The mining fund collects 8 percent of mining royalties.

In the case of the DRC, their use would be preferable for rare events (return period of 50 to 100 years) with a low probability of occurrence in order to offer an advantageous cost/benefit ratio. Insurance against disasters with more frequent return periods, such as moderate floods, could be provided with specific conditions for the failure of risk reduction measures defined specifically in the insurance contract.

6.4 Financial resilience of households, farmers, and small businesses

Supporting the development of affordable private insurance, including for farmers.

Given the importance of agriculture for food security and its vulnerability to hazards (Section 2.9.4), the results of the meso-insurance pilot conducted under the PNDA (Section 4.2.2) should be monitored regularly in anticipation of the insurance renewal expected at the end of the 3-year project. Depending on the results, an extension of coverage—under acceptable and sustainable financial terms—to agricultural cooperatives throughout the country could be considered. The government could also support initiatives to raise awareness among the private sector and households on disaster insurance products to reduce the government's contingent liability in the event of an emergency.

Exploring the development of an adaptive social protection system.

The government could consider developing a social protection system in the medium/long term to enable rapid adjustment of social coverage and benefits in response to shocks. This project should rely on a normative framework, an integrated budgetary and financial approach, and operational protocols to align social protection measures with the DRM framework and CSN-GHC actions. This system could also draw on the digital solutions (digital identity) currently being deployed, as well as on the existing social registry and various databases identifying the most vulnerable populations (such as the DHIS2 registry used by the health system). Prior identification of resident populations in areas most prone to disasters, including through the social registry maintained by the MASAHSN, would allow for faster response and thus ensure greater resilience of vulnerable populations.



BOX 10

A SHOCK-RESPONSIVE SOCIAL SAFETY NET IN MALAWI

With an economy that relies heavily on rain-fed agriculture, Malawi is increasingly vulnerable to climate shocks. In recent history, the country has seen an increase in the frequency and severity of droughts, which has hit the poorest and most vulnerable communities hard. When drought strikes, the Government of Malawi relies primarily on budget reallocations and external support to fund emergency relief activities, threatening the country's fiscal and fiscal stability.

To address this issue, the government leveraged its well-established national social safety net program, the Social Cash Transfer Program (SCTP), by making the system adaptive to climate risks. At the government's request, the World Bank's DRFI, Social Protection, and Employment teams provided technical expertise on the use of DRF to develop an adaptive social protection mechanism. This was implemented through the Social Support for Resilient Livelihoods Project (SSRLP), with funding from the Disaster Protection Program, a trust fund managed by the DRFI team and funded by the UK government.

The mechanism targets some of Malawi's most vulnerable populations: poor households with no capacity to work who cannot participate in other safety net programs, including public works. It is financed by contingent financing and parametric insurance that unlock additional SCTP financial assistance to beneficiaries and offer rapid support in case of drought.

Today, the facility can provide up to US\$32 million in additional financial capacity to the SCTP during droughts, and covers about 1.8 million people in total. In 2021/22, 74,000 vulnerable households received a payment through the SCTP mechanism for the first time due to rainfall deficit. Advance payments allowed communities to avoid adopting negative coping mechanisms. Payments were made, where possible, through digital means such as electronic payments.

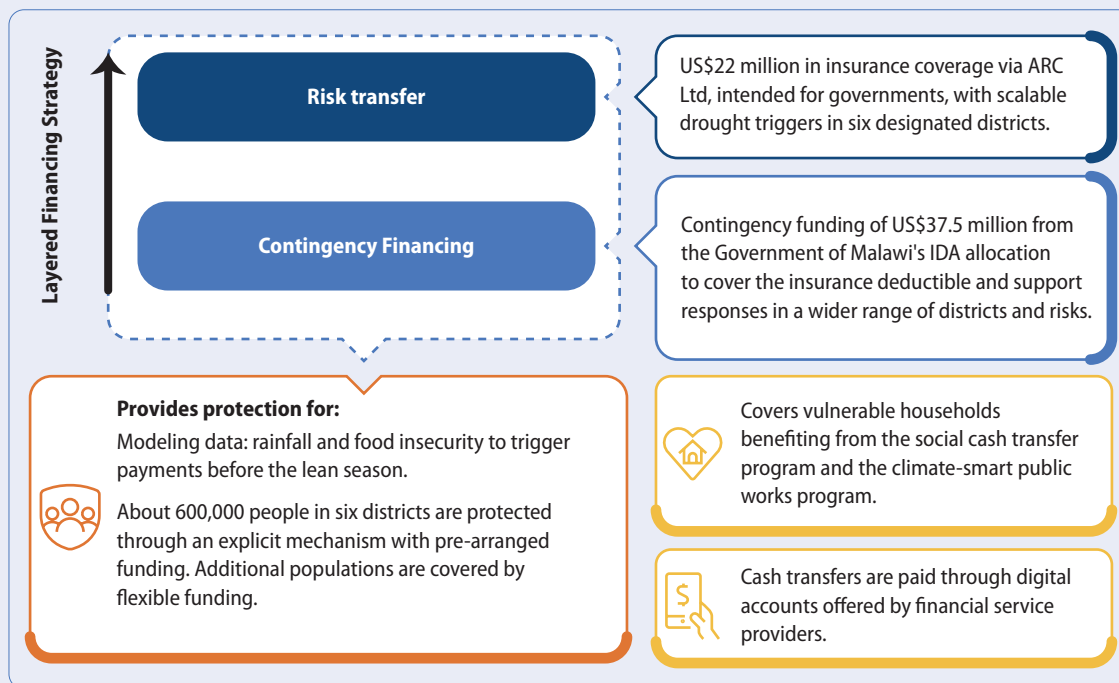
The DRFI team provided expertise to design the financial strategy for the mechanism and structure the financial instruments supporting the SCTP (index and trigger design, premium pricing, policy drafting, tax requirements, reinsurance arrangements, etc.). In addition, premium financing was provided by the Global Shield Financing Facility (GSFF), a trust fund managed by the DRFI team.



BOX 10

FIGURE 51

Malawi's Adaptive Social Protection Program is Supported by a Sovereign Parametric Insurance Program



For more information:

[World Bank \(2023\). Financing Adaptive Social Protection in Malawi to Protect the Vulnerable \(Blog\)](#)

[World Bank \(2023\). Using DRF to Build Adaptive Social Protection for Climate Shocks in Malawi.](#)

[World Bank \(2023\). Trigger Design for Adaptive Safety Nets in Malawi.](#)

[Malawi Ministry of Finance \(2024\). Social Support for Resilient Livelihoods: Scalable Hand-book.](#)

Developing analytical work to inform DRF solutions targeting MSMEs.

In the medium term, analytical work could be developed to study the feasibility of DRF solutions adapted to MSMEs, for example through the Partial Credit Guarantee Fund managed by the Microfinance Fund (FPM) on behalf of the Ministry of Entrepreneurship and Development of Small and Medium Enterprises. Various countries have equipped funds/state-owned banks/MFIs with support schemes for small businesses in the form of post-disaster lines of credit (e.g., Burkina Faso, Pakistan) to provide quick liquidity to businesses, or through a partial credit guarantee mechanism, providing guarantees to financial institutions against disaster-related defaults.



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7

APPENDICES



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7.1 Detailed methodology and results of the financing gap analysis

7.1.1 Modeling the economic and financial impact of disasters

Data collection

The first step consisted in collecting historical data on losses and damage caused by natural disasters. In the case of the DRC, there is no historical data on budget expenditure related to emergency response, nor on the macroeconomic impact of disasters, the cost of rebuilding public infrastructure, or the amount of public aid granted to the population and the agricultural sector. Due to this lack of data, there was a need to establish a reliable and operationally relevant proxy for the government. The decision was made to model the cost of public support to affected populations based on historical data on public response.

The databases used for modeling are the following:

- **EM-DAT:** Emergency Events Database, a global disaster database that compiles and stores data on natural and technology-related events and their impacts, dating back to 1900.
- **UNOCHA:** An extract from the database on floods provided by UNOCHA (United Nations Office for the Coordination of Humanitarian Affairs) for the period 2021-2024.
- **ETHTool:** The data portal managed by the World Health Organization in the DRC which, as part of this project, provided information on populations affected by diseases.

The period considered in our study goes from 2000 to April 2025 in order to maximize the relevance and reliability of the data used. We selected pandemics and floods as the focus of our work, as these are the only hazards for which the data were deemed sufficient. The data collected were made reliable by cross-checking with reports from humanitarian agencies, appeals for donations, and press clippings available for each database entry. This allowed us to eliminate some outliers. The collected databases whose reliability could not be ensured due to a lack of rigor in their maintenance and/or data addition were excluded.

Adjustment and scaling

The data on affected people were scaled to reflect changes in DRC's population over time. To this effect, the following formula was applied to each data point:

$$\text{Adjusted population year } N = \frac{\text{Pop. year 2025}}{\text{Pop. year } N}$$

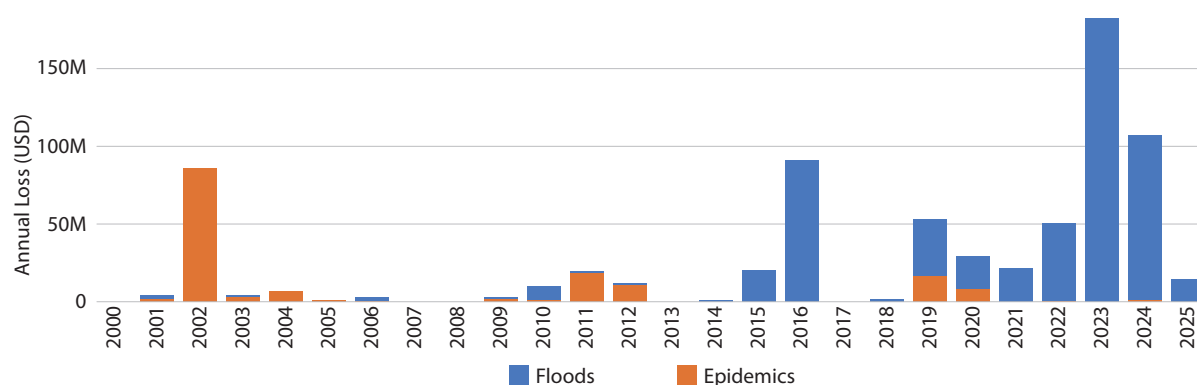
The data were then adjusted to obtain an estimate of the financial cost of responding to natural disasters for the government. The following assumptions were applied:

- **The emergency assistance provided to the population in the event of epidemics, as calculated for the purpose of this diagnostic, amounts to about US\$80 per person.** This figure was computed using the average cost of responding to various diseases documented between 2000 and April 2025, the recorded number of people affected, and the corresponding funds allocated to the response. Analysis of the data shows that DRC has faced epidemics of very different diseases, each with its own cost of response. To provide a complete picture of the hazard, the average cost of response for several diseases was calculated. Outlier unit response cost for various diseases were discussed and some were discarded.
- **Emergency assistance to populations in the event of flooding was also estimated at US\$80 per person for the purpose of this diagnostic.** This amount was calculated using the average cost of responding to flood events documented between 2000 and April 2025. A data processing system similar to that used for epidemics was deployed to ensure the reliability of the cost of emergency response to flooding events.

$$\text{Cost Year } N = \text{Adjusted Population Year } N * \text{Emergency Assistance}$$

FIGURE 52

Fiscal impact of the support to the populations affected by natural disasters (2000 – April 2025)



Sources: World Bank stochastic modeling using EM-DAT data and various academic and humanitarian sources for the period 2000-2025.

Statistical analysis

Statistical models make it possible to simulate a large number of events (15,000) of random magnitude. These simulations allow us to establish two types of measurements: the Average Annual Losses (AAL), i.e., the amount of losses that the country suffers every year on average, over a large number of years; and the Maximum Probable Losses (MPL), which are the losses associated with an event of a given severity and frequency. To describe this event, we refer to the probability of occurrence. An event that occurs on average once every 10 years has a 1 in 10 chance of happening, or a 1 percent chance of happening every year.

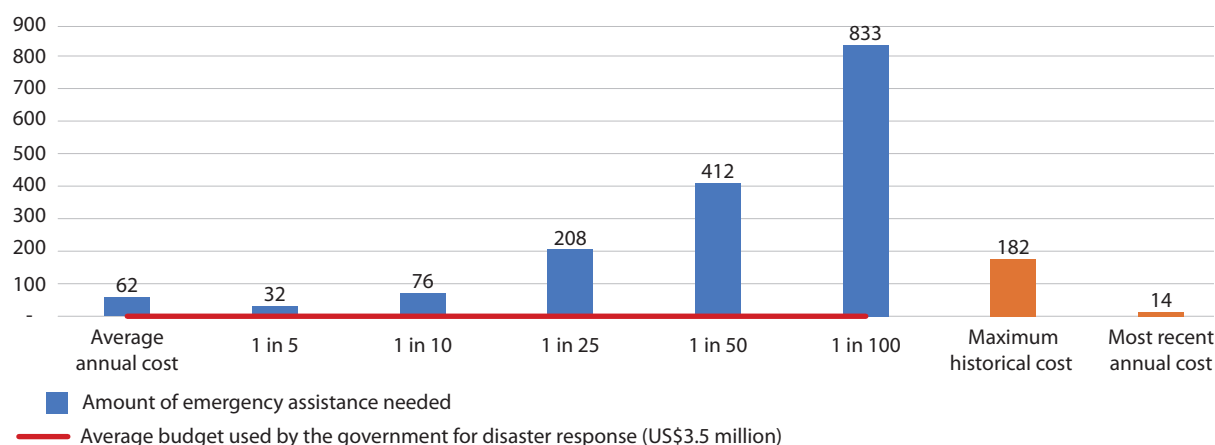
Results

The analysis shows that support to populations affected by floods and pandemics could cost the government about US\$62 million every year on average in emergency assistance, mainly in the form of food aid, temporary shelters, and access to drinking water (Figure 50). For a moderate intensity event (10 percent probability of

occurrence), the needs could exceed US\$75 million; and for an extreme event (1 percent chance of occurrence), they could exceed US\$ 833 million. The financing gap could be much larger if we took into account all the government's contingent liabilities (emergency response operations, reconstruction of housing and public infrastructure, support to farmers, etc.).

FIGURE 53

Modeled flood and drought emergency response costs for different return periods (US\$ millions)



Sources: World Bank stochastic modeling using EM-DAT data and various academic and humanitarian sources for the period 2000-2025.

Limitations

This approach has however many limitations:

- **The database used (EM-DAT) only document events reported by the government and is therefore incomplete.** Events of low to medium severity are rarely reported, and the human and financial impacts of some hazards are difficult to quantify or count, leading to frequent underestimation. Therefore, these data provide only partial insight into the country's risk profile.
- **The approach only considers emergency response in the form of financial (or in-kind) assistance to affected populations.** It does not include damage to buildings, loss of agricultural yields, direct and indirect economic losses, or other public expenditure related to recovery or reconstruction. It also fails to capture the financial impact of shocks on businesses and agriculture. Furthermore, the analysis conducted on the cost of humanitarian response to shocks remains partial due to the lack of detail on the causes of the humanitarian response¹⁰⁶ or the share that may be allocated to disaster responses in the multi-year aid programs of some countries.¹⁰⁷ Thus, only aid for which the link or mention of the disaster addressed was retained, which may have led to an underestimation of the aid provided in response to shocks.
- **The approach only considers floods and pandemics,** whereas the DRC is exposed to other types of shocks (volcanoes, earthquakes, droughts, etc.).

¹⁰⁶ E.g. "Aid in response to the multiple climatic hazards that have affected the population" without distinction of hazards, which makes it impossible to link the cost of response to a specific hazard.

¹⁰⁷ E.g. "Multi-year program of support for food security of vulnerable populations in the DRC".

7.1.2 Funding gap

Once financial needs have been modeled, the amount of public resources available to meet them must be quantified.

Currently available funding

Based on the information collected, it was established that the use of budget lines for disaster response had been relatively limited over the past five years. Approximately US\$3.5 million were mobilized annually, including US\$1.9 million from the National Solidarity and Humanitarian Disaster Management Fund (CSN-GHC) and US\$1.6 million from the National Road Maintenance Fund (FONER).

This budget is relatively small compared to response needs. **Analysis shows that there is a 61 percent chance that it will be used every year.**

Definition of complementary financial strategies

Financial strategies are defined to study the implications for different public investment allocations in DRF. These strategies may incorporate a combination of risk retention and risk transfer instruments. Each instrument entails costs for the government: opportunity cost of reserves, interest on contingent credit, cost of insurance premiums.

The expected benefits are represented by the amount of losses covered, i.e., of public expenditure avoided.

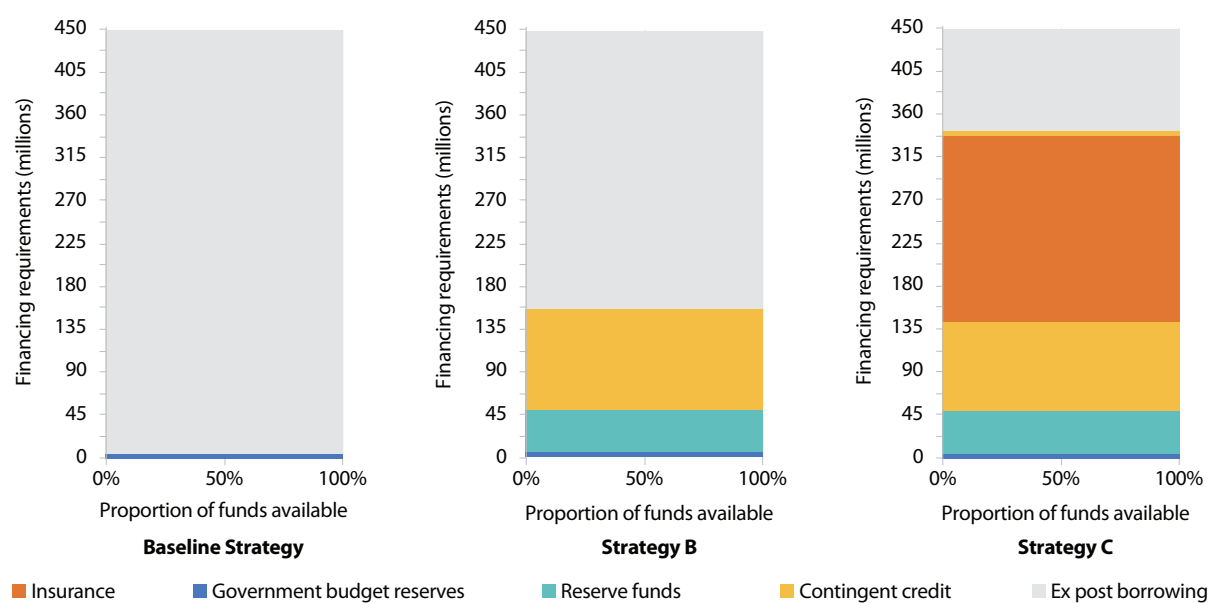
- **The baseline strategy** is based on a reserve of US\$3.5 million, which is the approximate expenditure recorded by the government for disaster response over the past two years.

Strategies B and C include contingent financing and flood risk transfer instruments (which the analysis identified as the most significant risk in the DRC):

- **Strategy B** corresponds to the aforementioned US\$3.5 million reserve, supplemented by a US\$45 million reserve and US\$105 million in contingent financing.
- **Strategy C** corresponds to budget reserves of US\$3.5 million, borrowed reserves of US\$45 million, and contingent financing of US\$95 million. This strategy also includes parametric insurance, with a premium of US\$30 million over 5 years to cover flood risk.

To analyze the relative merits of ex ante instruments, strategy B includes only risk retention instruments in the form of additional reserves and contingent financing, while strategy C reduces contingent financing to transfer some of the risk to sovereign insurance. The World Bank's rapid response option was deliberately excluded from the modeling because of the variable amount DRC could access. Due to limited information on funds that could be subject to budget reallocations, this instrument was also excluded from this exercise.

FIGURE 54
Different financial risk hedging strategies



Source: World Bank



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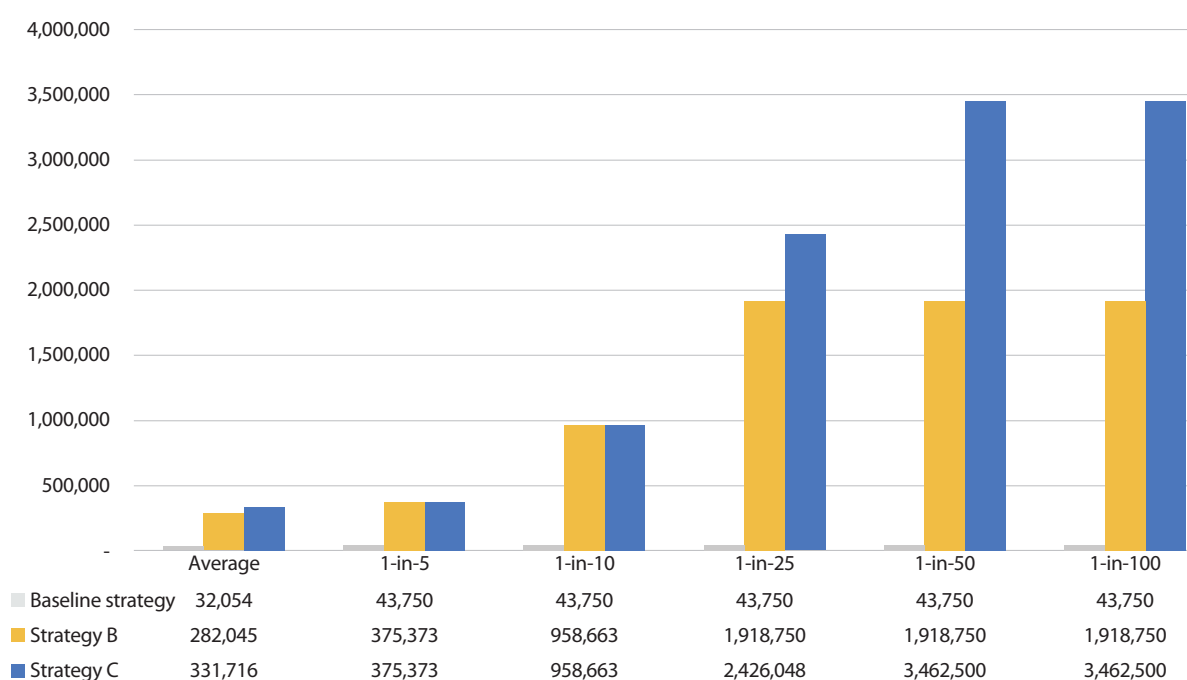
Results

In order to obtain the most complete view possible, it is necessary to analyze the coverage offered by each strategy, which differs depending on the return periods:

- **Strategy B provides more immediate risk coverage because it maximizes the use of contingent credit.** It also maximizes population coverage compared to the baseline strategy when large shocks (1 in 25 years) occur. The use of contingent credit limits the costs of this strategy because those associated with contractualizing this instrument remain limited, mainly to premiums and commissions, as long as it is not triggered and does not require the costly permanent mobilization of funds, unlike reserves.
- **Strategy C includes parametric insurance¹⁰⁸ that provides coverage to the largest population in case of a severe or extreme event.** This strategy is best suited to respond to large-scale events. The premium paid to the insurer¹⁰⁹ unlocks an indemnity that provides assistance to twice as any people as in Scenario B. However, the cost of this strategy is higher than the others, since paying premiums, without compensation associated with low return periods, entails higher opportunity costs compared to the baseline strategy.

FIGURE 55

Number of people assisted according to the severity of the shocks and the different financing strategies implemented



Source: World Bank.

¹⁰⁸ The multiple cost of insurance used for insurance is 1.5 and the Beta is 1.

¹⁰⁹ Insurance premiums are usually paid annually.

Limitations

It should be noted that this approach has certain limitations:

- **It is based on input data, which itself has its own limitations** (see previous section).
- **It is limited to three types of instruments** (reserves, contingent credit, insurance) and does not allow the integration of the existing range of DRF instruments on the market (adaptive social protection, Cat-Nat insurance for households, instruments dedicated to businesses and the agriculture sector, etc.).

