South Africa

Disaster Response Financing Strategy

national treasury
Department:
National Treasury
REPUBLIC OF SOUTH AFRICA

About this document

This strategy document builds on a Disaster Risk Finance Diagnostic conducted by the World Bank jointly with National Treasury and extensive consultations with key stakeholders (see *Stakeholders consulted*). Building on the diagnostic and inputs from stakeholders, this strategy document describes the next steps the government intends to undertake to build a more robust disaster risk financing response.

This strategy has been prepared by the National Treasury with the support of the World Bank and the Swiss Economic Development Organisation (SECO). The authors are grateful for comments and inputs from Ulrike Britton, Anthea Stephens, Wendy Fanoe, Letsepa Pakkies, Jonatan Daven, Georgina Ryan, Daniel Sullivan and other colleagues from National Treasury. The consulting team was Roy Havemann, Jana van Deventer, Cecilia Schultz and Nxalati Baloyi from Krutham (previously Intellidex). The World Bank team comprised Caroline Cerruti and Michal Krzysztof Pietrkiewicz. Comments integrated into this version came from Karen Shippey, Mandy Jayakody, Vespa Mabitsi, the Western Cape Provincial Treasury and the Eastern Cape Provincial Treasury.

Foreword

Reducing the fiscal burden and ensuring adequate financing for disaster response has become central to ensuring the well-being of South Africa's citizens, a vibrant economy, and the nation's fiscal health. If unaddressed, the increasing prevalence of disasters, caused by climate change and socio-economic dynamics, will progressively diminish the government's ability to fulfil its constitutional obligations.

Building a financial strategy for disaster response underscores the government's commitment to fiscal prudence in the management of public funds. Without adequate planning, the costs of disasters, both financial and social, can become unmanageable, undermining the government's ability to effectively protect its citizens during a crisis, and consequently eroding public trust. With this perspective, the government has undertaken a comprehensive analysis of its vulnerability to natural disasters and initiated the process of creating new and revising existing, laws, policies, and procedures. The main objective of these changes and enhancements is twofold: first, to ensure efficiency in resource allocation, with a specific focus on optimising the balance between preparedness and response financing. Second, it seeks to ensure fairness in the distribution of resources. To this end, the disaster response financing strategy focuses on improving the availability and distribution of funds in the aftermath of disasters. It addresses funding amid and after disasters and therefore does not target pre-disaster activities such as risk reduction, mitigation and preparedness.

Due to its legislatively determined mandate, working closely with partners in the Department of Cooperative Governance and Traditional Affairs, the Presidency and the broader government, National Treasury will manage the process of reducing the financial impact of disaster-related shocks on the South African budget. This will be achieved by the coordinated implementation of a comprehensive risk-layering approach to financing that leverages contingency financing, such as dedicated funds, contingent lending, insurance, and the building of efficiencies in the post-shock reallocation process. Steps will be taken to improve the flow of funds within and across spheres of government during disasters. This responsibility aligns with National Treasury's role in intergovernmental fiscal planning, its position as the custodian of public finances, and its capacity as the financial sector regulator. These roles and responsibilities primarily derive from the powers stipulated in Chapter 13 of the Constitution and from Section 6 of the Public Finance Management Act of South Africa.

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Overview

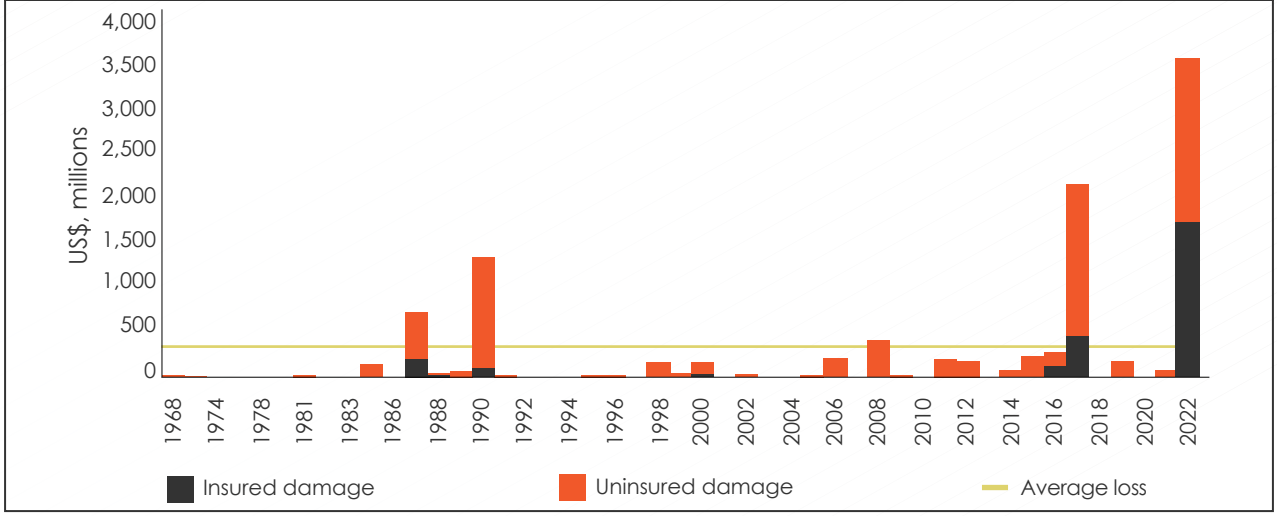
Disasters[1] impose significant economic and social costs. This Disaster Risk Financing Strategy builds on a comprehensive Disaster Risk Finance Diagnostic[2] (the "Diagnostic") undertaken by the World Bank jointly with National Treasury. The Diagnostic showed that between 1952 and 2019, South Africa suffered economic losses from natural disasters amounting to R172bn, with a substantial portion absorbed by the fiscus (see Figure 1). Disasters are often financed through reprioritisation of money from essential services such as education, health and safety. This approach erodes current and future development gains as costs to the repair and reconstruction of existing infrastructure, humanitarian response and aid to affected households and businesses are made with development funds. This approach sets the country on an unsustainable path as the losses are now factored on two fronts, ie development funds reduce and losses increase.

South Africa faces significant challenges in financing disaster response, with an overreliance on budgetary mechanisms. This typically leads to the reprioritisation of funds from critical areas such as social programmes and infrastructure which, in turn, increases South Africa's socio-economic vulnerability to disasters. The disbursement of disaster funding is often inefficient, leading to delays and underutilisation of funds, which undermines swift disaster response. This strategy proposes three interventions, targeted primarily at National Treasury, to increase the availability of funding for immediate disaster response and improve the efficiency of disbursing disaster funding.

The Diagnostic highlights strengths and challenges in disaster risk financing. A key challenge is South Africa's overreliance on budget mechanisms to respond to disasters, which may not be adequate to absorb and deal with shocks of increasing severity. The Disaster Risk Financing Strategy seeks to strengthen South Africa's capacity to finance efficient and effective disaster management and response while safeguarding fiscal stability and minimising the socio-economic repercussions on vulnerable communities. While it falls under the broader Disaster Risk Management Framework, this strategy focuses on addressing residual financial risks and enhancing the financial efficiency of the government in fulfilling its response obligations. It is implementation-focused and highlights key areas of work to be taken forward to strengthen South Africa's financial resilience to disasters.

This strategy proposes a work programme to reduce the impact of these events through balancing risk transfer and risk retention and the introduction and expansion of novel risk financing instruments. Expanding National Treasury's suite of risk financing instruments could generate savings of about R105m on average, and up to R7.5bn for extreme shock events. The strategy also suggests changes in distribution mechanisms within the government and makes recommendations on adjustments to the grant system that aim to build incentives for state actors to implement preparedness measures, encompassing both adaptation to disaster risks and financial preparedness.

Figure 1: Financial cost of disasters (1968 - 2022)



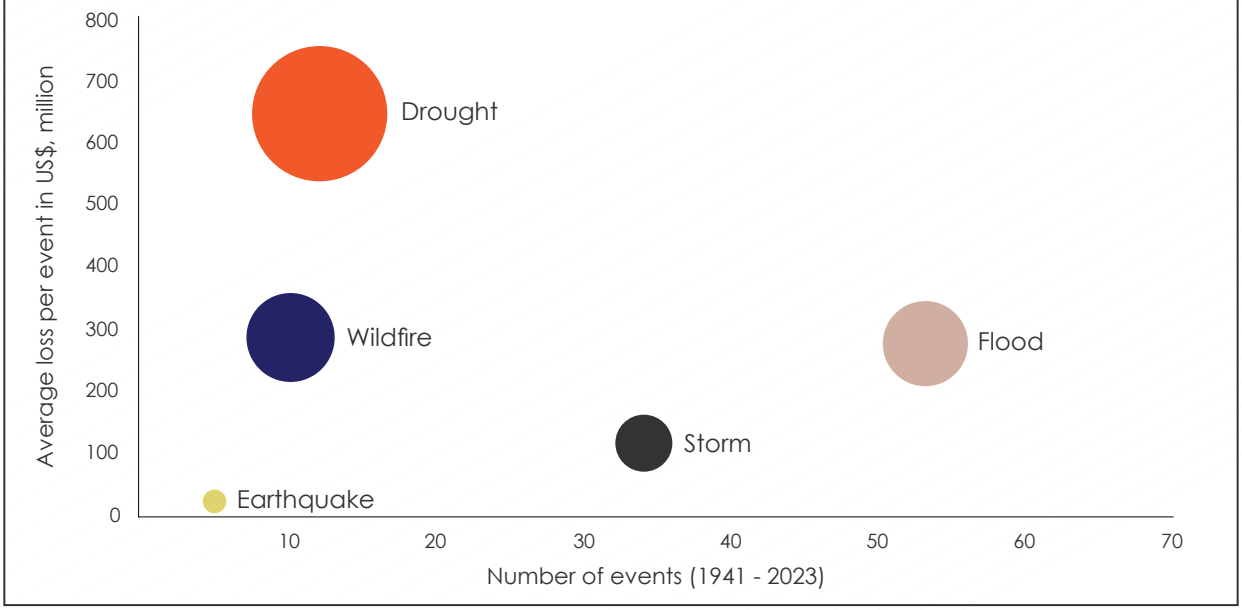
1. A "disaster" is defined in terms of the Disaster Management Act of 2002, as a progressive or sudden, widespread or localised, natural or human-caused occurrence which (a) causes or threatens to cause- (i) death, injury or disease; (ii) damage to property, infrastructure or the environment; or (iii) disruption of the life of a community; and cope with its effects using only their own resources.
2. The full diagnostic is available here.

The strategy notes that disasters could arise from multiple sources, highlighting the need for a flexible response. These include:

- *The effects of climate change*. The country's submission to the Paris Climate Accords[3] notes that since 1980 there have been 86 noticeable weather-related disasters that have affected more than 22 million South Africans and have cost the economy in excess of R113bn (US$6.81bn) in economic losses. Moreover, it anticipates more weather-induced hazards such as flooding, heatwaves, droughts, wildfires and storms;
- *Protest action*. There has been an increase in protests, with the Diagnostic showing that there were 1,260 incidents in 2022 and 1,092 incidents in 2023. Such social unrest often stems from unresolved structural problems (inequality, unemployment, income poverty), which may be aggravated by climatic shocks, increasing their costs. These can often be contained, but the July 2021 riots in KwaZulu-Natal imposed significant fiscal and other costs on society;
- *Epidemiological / health-related*. The COVID-19 pandemic highlighted that health-related disasters create a multitude of impacts that are difficult to plan for upfront;
- *Agricultural-related*. Other than weather-related events, a variety of agricultural-related disasters can have significant impacts on the sector, including outbreaks of disease (eg foot-and-mouth disease) or locust infestations; and
- *Uncontrolled urbanisation*. In 2022, more than 68% of South Africa's total population lived in urban areas and cities[4]. The urban population is expected to rise to 71% by 2030 and 80% in 2050, which places enormous pressure on the provision of services, safety, security and availability of land[5]. Furthermore, when people settle on unsafe land, it increases their vulnerability and exposure to hazards.

Different types of events have different economic costs and fiscal consequences. They affect both the revenue and expenditure sides and create explicit and implicit liabilities for the fiscus. Droughts have significant economic costs, but being slow onset, more complex fiscal consequences. For example, there may be limited direct impact on public infrastructure but a more significant impact on local municipal revenue collection, and on agricultural production. Floods, on the other hand, impose immediate and large costs. These costs are often imposed on public infrastructure with consequences for the economy. For example, the loss of a road due to flooding may harm economic productivity. Social unrest, on the other hand, may be relatively short-lived but is often targeted at public infrastructure (eg the burning of trains), creating fiscal costs.

Figure 2: Frequency and severity analysis of disasters in South Africa



3. South Africa: First Nationally Determined Contribution under the Paris Agreement, updated September 2021.
4. https://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS?locations=ZA
5. https://pmg.org.za/page/Urbanisation

Different disaster funding responses require careful consideration of the nature of the disaster, its direct and indirect effects, and the mitigation of economic consequences. In this context, it is crucial to align various financing instruments based on the severity and frequency of shocks. Budget responses are generally suitable for low-frequency and low-severity shocks, but they should be executed with the minimum opportunity cost in mind. This ensures that reallocations do not compromise strategic projects and that reserve funds are adequately sized to prevent the creation of silos and the loss of potential returns. Additionally, budget responses should be complemented by contingent instruments and insurance for disasters with higher frequency and severity. The urgency of a quick response, especially in situations of imminent danger, must be balanced against the higher cost of getting immediate funds. Balancing these considerations is vital in addressing the distribution of needs over time, ensuring that immediate dangers are promptly addressed while also preparing for potential shocks with more severe consequences.

South Africa has a comprehensive and advanced legal and institutional framework. Circumstances have changed certain gaps and implementation challenges have emerged, particularly in the context of multi-level government responses. The traditional focus of legal and institutional development has been on ensuring transparency, fairness, and inter-governmental cross-checks. While these principles must continue to guide the government, they might need refinement to address the urgency required for rapid response in contingencies, especially considering the complex dynamics between different levels of government. Similarly, some institutions may lack the agility to operate effectively amidst the increasing frequency and intensity of disasters. It is therefore crucial to strengthen these institutions to enable them to financially support responses across a spectrum of events, from frequent mild disruptions to unforeseen and high-impact occurrences.

Incentives for financial preparedness should be strengthened to encourage more proactive planning and maintenance across all spheres of government. The existing system of disaster financing response, outlined in the Disaster Management Act (2005), generates perverse incentives. Once a state of disaster is declared by either national, provincial or local government, it triggers the release of additional funds from higher government tiers (such as the National Revenue Fund or central contingency funds), which are otherwise inaccessible for disaster response efforts. However, municipalities can only access these funds if they have exhausted their resources. This incentivises short-term spending over long-term resilience as municipalities might under budget for disaster response, knowing they can rely on relief funds when required. This approach creates a cycle of reactive spending instead of proactive investments in mitigation and preparedness.

Relatedly, the current use of self-insurance – using their own resources to cover losses from disasters – by provincial and municipal governments introduces significant moral hazard into disaster management. Moral hazard occurs as government entities, knowing they can access external funds, de-prioritise spending on long-term resilience. When government entities rely on self-insurance they may be less inclined to allocate sufficient funds and resources toward the upfront costs of disaster prevention and preparedness.

There is a need for more deliberate thinking about contingency budgets and the creation of incentives at the provincial and municipal level to plan for disasters. This includes rethinking self-insurance models to reduce moral hazard and ensuring that mitigation budgets are effectively used within asset maintenance systems. The focus should be on ensuring that essential infrastructure, such as stormwater drains that are essential for disaster mitigation, receives adequate maintenance. Structuring incentives within the grant system to ensure that maintenance budgets for provincial and local government spheres are not only allocated but also expended is vital to enhancing overall disaster preparedness and response capabilities.

Legal and regulatory changes to the insurance sector are also required to address inclusion, affordability and access for a wide range of stakeholders. First, the regulatory frameworks governing microinsurance need to be tailored to address the realities and unique needs of SMMEs and low-income individuals and households, especially in terms of non-life insurance. Microinsurance, which refers to insurance accessed by low-income individuals and households, has long been recognised as a valuable form of social protection[6]. Currently, microinsurance is regulated in the same manner as life and non-life insurance – through the Insurance Act (2017), the Short-term Insurance Act (STIA) and the Long-term Insurance Act (LTIA)[7].

6. Ackerman, E. (2020) "Microinsurance in the context of social protection: Overcoming the barriers of economic growth and development" https://repository.up.ac.za/bitstream/handle/2263/78866/Ackerman_Microinsurance_2020.pdf?sequence=1

7. The Prudential Authority is responsible for prudential supervision of micro-insurers while the Financial Sector Conduct Authority (FSCA) supervises from a conduct perspective.

In other words, there is no distinct regulatory framework for the microinsurance industry that can enable insurers in this space to tailor products to the characteristics of their consumer market[8]. While existing insurance regulations emphasise the need to lower barriers to entry, restrictions on product design (benefit caps), licensing, intermediation and the cost of regulatory compliance undermine both product innovation and affordability. National Treasury has already flagged the need for reform of the legal and regulatory framework for insurance of microenterprises. Second, amendments to the MFMA are necessary to resolve wording ambiguities that currently prevent municipalities from entering into long-term financial contracts, such as the Regional Emergency Preparedness and Access to Inclusive Recovery (REPAIR) initiative.

South Africa's legal and institutional framework must evolve to keep pace with macroeconomic shifts, global changes, and the country's evolving global position. These dynamics may affect the accessibility and affordability of essential funds. It is imperative to adjust legal and institutional structures to ensure they remain effective in a changing world, facilitating better disaster resilience and economic stability.

Recent examples of disasters

Some of the recent painful reminders of the cost associated with natural shocks include the Day Zero drought, which cost the Western Cape R5bn and is estimated to have led to the loss of 25,000 jobs. Additionally, several provinces in the Eastern Cape, Limpopo, Northern Cape, and Free State have recently experienced agricultural damage due to severe drought years, resulting in harvest and livestock losses. Among the most striking was the 2015/16 El Niño drought, which destroyed significant amounts of crops and led to price spikes of over 50% compared to the five-year average. Most recently, the metropolitan municipality of eThekwini was affected by devastating floods in April 2022. These floods led to the loss of 448 lives, the displacement of over 40,000 individuals, the destruction of 12,000 homes, and damage to vital public and private infrastructure. The COVID-19 pandemic, while impossible to predict, serves as a painful reminder of how vital financial preparedness is in the face of large-magnitude shocks.

8. In 2008, National Treasury released a discussion paper titled "The Future of Micro-insurance regulation in South Africa" that sought to develop a regulatory framework that would encourage and facilitate the provision of microinsurance. The Prudential Authority incorporated the microinsurance regulations under the Twin Peaks regulatory framework with the Insurance Act.

Summary of the strategy

The strategy prioritises three areas:

1. Increasing the availability of funds;
2. Improving the distribution of those funds; and
3. Enhancing ongoing disaster-related data collection.

First, the strategy sets out a programme of work to **increase the availability of funds**. Currently, South Africa relies heavily on the fiscus for disaster relief, which often necessitates the reprioritisation from planned development expenditures. This undermines sustainable development and draws attention to the urgency of addressing the dependency on budget reallocations. The strategy proposes that, where appropriate, disaster response involves other financial sources beyond the fiscus, such as a contingency fund and risk transfer (eg sovereign and private insurance). This could involve the private sector in South Africa (eg insurance of public buildings) or alternative public/private sector providers (eg international development finance institutions or risk pools offering sovereign insurance). Where it is more efficient to retain risks, appropriate processes are required to ring-fence funds and minimise the cost of emergency reallocations.

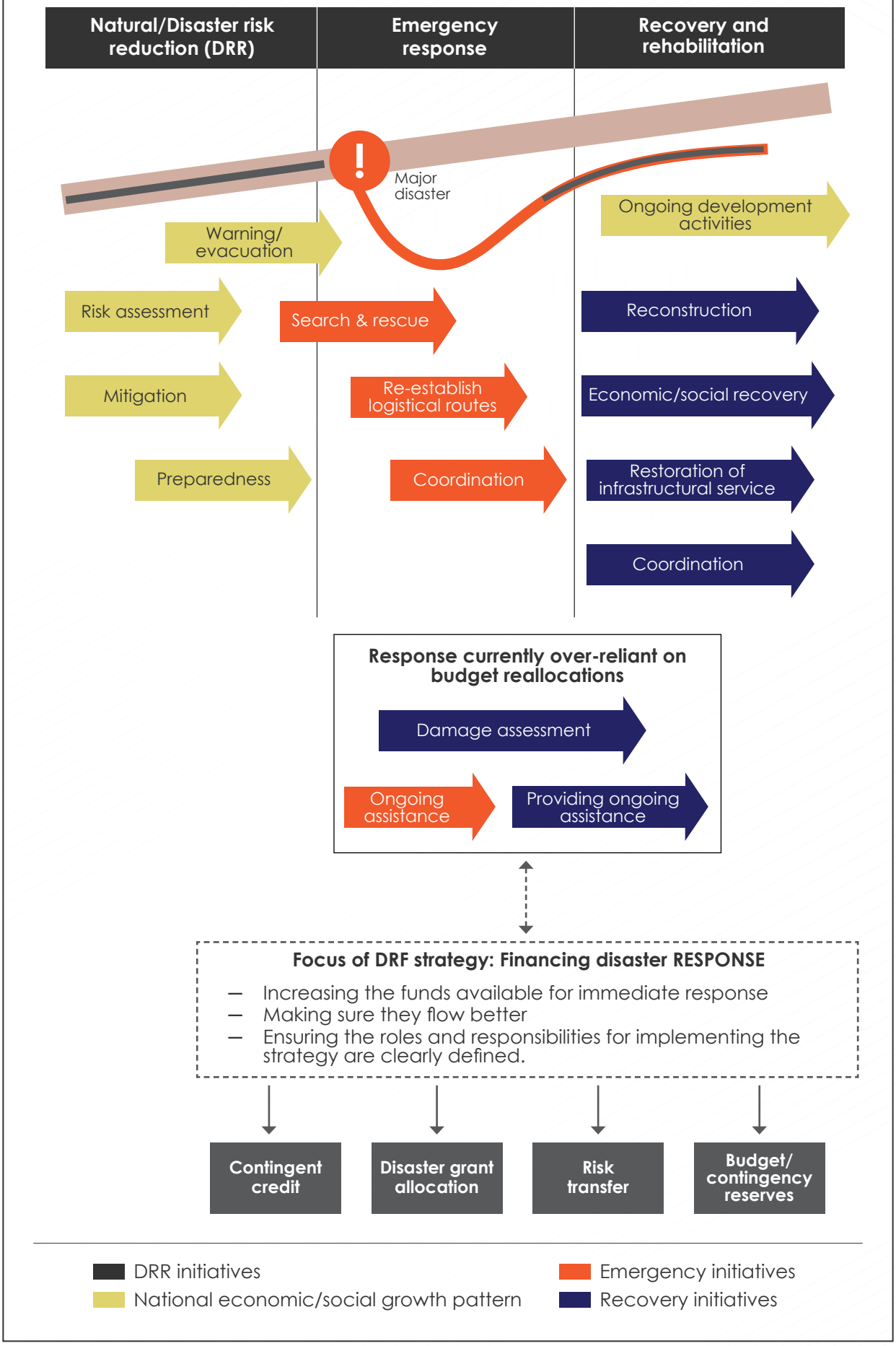
Second, the strategy proposes a programme of work to **improve the national government's capacity to distribute funds to provincial and municipal governments efficiently.** This involves a comprehensive review of the grant system for disasters, which includes incentives for preparedness among government spheres as well as financial instruments designed to quickly meet the response needs of municipalities. The proposed programme will streamline the approval processes and leverage technology to support intergovernmental transfers with automatic triggers, thereby expediting the availability of funds during emergencies. A vital part of this strategy is also to ensure that municipalities have access to and provide high-quality data, required for informed decision-making and effective disaster response.

Third, and related to the previous point, the strategy emphasises the need to **strengthen data collection efforts**, including gathering detailed information on the sources and use of funds related to specific disasters, as well as on the maintenance status of public assets to facilitate their insurability. To complement these efforts, the strategy advocates for making DRF data publicly available and sharing this data with the private sector, specifically insurance companies. This is vital for fostering a collaborative environment and enabling more informed decision-making across all sectors. This could be complemented by building incentives for private insurance companies to share their loss data, which could improve the understanding of risks and pricing of insurance products.

Figure 3 illustrates the focus of this strategy within the broader comprehensive disaster management framework. It shows that the financial instruments and distribution mechanisms discussed in this document are primarily aimed at enhancing financing for disaster response. While this may have implications for financing prevention and preparedness, it is not targeted at these phases of the disaster management cycle.

Diversifying financing options beyond the reliance on the fiscus, through mechanisms such as contingent funds and insurance, is crucial for enhancing South Africa's ability to absorb and respond to disaster-related shocks. This approach includes exploring partnerships with private insurance companies, multilateral financial institutions, donors and philanthropic foundations to ensure a robust and resilient financial framework for disaster management.

Figure 3: Disaster management cycle



Source: Adapted from Mitchell (2011)

Summary of recommendations

Priority 1
Increase the availability of funds

The priority aims to boost South Africa's fiscal resilience to disasters by diversifying funding strategies. Key measures include expanding indemnity insurance for public assets and increasing insurance coverage for households and business, thereby transferring some fiscal risks from the government to the private sector. Additionally, to increase the availability of funds through sovereign parametric insurance and contingent funding from markets. These steps, combined with more efficient use of the contingency reserve and improved budget reallocations, from a comprehensive risk-layering strategy, ensuring sustainable fiscal resilience against disasters.

Recommendations

- Risk-based approach to DRF
- Collborate with financial institutions to improve legislation and regulation
- Capacity building on strategic financial instruments
- Establish learning systems for each of the instruments
- Review and amend microinsurance framework

Priority 2
Improve the ability to distribute funds

The priority aims to boost efficient disaster response by enhancing coordination between different government levels, communities and the private sector. Focus on strengthening decentralised response system: faster, more efficient fund allocation, particularly to local government. The strategy emphasises revising funding mechanisms, building inter-governmental trust, and prioritising preparedness. Additionally, it stresses protecting businesses and jobs in the face of disasters, with an emphasis on private sector innovation and resilience, crucial for economic stability and rapid support to affected communities.

Recommendations

- Reinforce grant system with emergency response regulations
- Review disaster response grants
- Support key businesses during shocks
- Support sub-national governments' effort to improve financial planning and post shock budget execution ability

Priority 3
Enhance data collection and management

The priority focuses on bolstering data collection and management to enhance disaster risk management and budgeting. South Africa plans to address data fragmentation and lack of standardised reporting by establishing a national disaster database and a web-based NHE. Additionally, the strategy involves integrating insurance sector data for better risk assessments and creating a database for MSMEs to assess their economic vulnerability in disasters. These measures aim to streamline disaster response and align with the Sendai Framework's emphasis on quality data in disaster risk reduction.

Recommendations

- Build data strategy linking data types with activities
- Designate entities for data collection
- Ensure sustainability of the data process
- Promote the development of open standards to ensure interoperability between different data systems

Priority 1: Increase the availability of funds

This priority area focuses on enhancing financial and fiscal sustainability by promoting resilience to shocks among institutions and society. It involves broadening the scope of non-fiscal financing instruments to encompass disaster risk insurance – covering both traditional indemnity-based insurance as well as sovereign parametric insurance – as well as other financial mechanisms. These include the contingency credit lines and assessing the viability of alternative sources of finance, such as solidarity funds, while monitoring the capacity to quickly mobilise funds through traditional debt issuance/borrowing in the event of a shock. This approach aims to provide a more comprehensive and adaptive set of tools for managing and mitigating the financial effects of disasters.

The first objective of the strategy is to increase the availability of funds for disaster response. Disasters can impose significant and unplanned costs on the fiscus – the fiscus needs to source funds at the right time, in the appropriate amount, and at the lowest opportunity cost. While this strategy focuses on funding for the immediate response to disasters, it recognises the importance of adopting holistic disaster risk management strategies into fiscal policy and planning to enhance fiscal resilience, particularly in countries like South Africa. The fiscal consequences of different types of climate-related disasters can be substantial and varied. Costs can arise from several sources, each of which requires a strategy for mitigation.

1. *Direct costs:* These include not only immediate damages to infrastructure, homes and businesses but also initial costs associated with the in situ deployment of emergency services and equipment within the first 12 -24 hours of a disaster. On the one hand, floods and fires can lead to significant property losses in buildings and utilities, leading to high reconstruction costs. On the other hand, the preliminary reaction costs usually borne by municipalities – such as deploying firefighters and rescue teams in the crucial early stages of an event – are often not covered by disaster funding.
2. *Indirect costs:* These are the secondary economic impacts, such as loss of productivity, business interruptions, and reduced economic output. For example, droughts can severely impact agriculture, leading to reduced crop yields and higher food prices. Floods can knock out a road network, leaving farming communities exposed to risk. Similarly, wildfires can disrupt local economies, destroy crops and lead to long-term environmental degradation.
3. *Relief and recovery expenditure:* Governments often have to spend significantly on relief efforts, rehabilitation, and rebuilding after a disaster. This expenditure can strain public budgets, especially in countries with limited financial resources.
4. *Insurance and risk management costs:* Climate-related disasters can lead to higher insurance premiums and increased spending on risk management and mitigation measures. For businesses and homeowners in areas prone to such disasters, this can mean a substantial increase in costs.
5. *Impact on public services:* Disasters can strain public services like healthcare, emergency services, and education. The need for immediate disaster response can divert resources from other essential services.
6. *Long-term fiscal impact:* The long-term fiscal impact can include increased debt due to borrowing for recovery efforts, a decrease in tax revenues due to economic downturns and potential shifts in government spending priorities.
7. *Social and economic inequality:* Disasters often disproportionately affect the poorest and most vulnerable communities, particularly women, children, the elderly and people with disabilities, exacerbating social and economic inequalities. The impact of a disaster on these groups is not only immediate but also socially and economically compounded over time. It is important to disaggregate disaster data for a deeper understanding of the varied consequences. For instance, during COVID-19, more women than men lost their jobs and women's employment recovery lagged behind that of men. Women, often employed in the informal or care sectors, which are poorly regulated and offer limited benefits, face exacerbated economic consequences. The social costs therefore translate into an indirect economic cost at the household and micro-enterprise level, affecting millions and undermining overall economic recovery.

Each type of disaster carries its own specific set of challenges and fiscal implications. Effective disaster preparedness, resilient infrastructure, and sustainable economic policies are essential to mitigate these fiscal consequences.

Parametric versus traditional insurance

This strategy recommends greater use of parametric insurance for disaster relief to complement traditional insurance, especially in scenarios where indemnity products are not feasible or financially prudent. Parametric insurance pays out when a pre-defined triggering event occurs[9]. Flood parametric insurance, for example, pays out automatically when rainfall exceeds a certain predetermined amount (this predetermined amount is the "parameter"). Countries can tailor the parameters of the insurance to the types of natural disasters they are most prone to, such as floods or drought.
However, it is important to note that choosing between parametric and traditional insurance needs to follow thorough consideration as these instruments serve different purposes and are not necessarily perfect substitutes for one another. The decision to opt for one over the other should be based on an analysis of their respective advantages and limitations in the context of the specific risk management needs and financial strategies of the entity or country in question.

What are the main differences between parametric and traditional (indemnity) insurance?

Aspect	Parametric insurance	Traditional ("indemnity") insurance
Basis of coverage	Pays out when a predefined events occurs, meeting certain parameters.	Covers the actual loss suffered, based on damage assessment.
Claims process	Quick and straightforward, with payouts triggered by specific parameters.	Complex and time-consuming, involves detailed loss assessment.
Use cases	Suited to natural disasters and situations where assessing actual damage is difficult.	Commonly used for property, car insurance, health etc, where loss can be accurately assessed.
Payout amounts	Fixed amounts pre-agreed upon, may not match actual loss.	Aims to cover the actual value of the loss, up to policy limits.
Risk assessment	Based on the likelihood and severity of the predefined event occurring.	Involves a comprehensive assessment of various risk factors.
Premium calculation	Calculated based on statistical probability of the event occurring.	Based on a range of risk factors and potential cost of indemnifying the loss.

South Africa has a shortfall in funds allocated for disaster response. The Diagnostic estimates that the average annual financial gap stands at R3.7bn; however, in extreme years, the shortfall can reach R22.5bn[10] . Based on the estimates in the Diagnostic, using part of the contingency reserve and response grants, the government can on average rapidly access funds amounting to R1.4bn, leading to an estimated annual deficit of R2.3bn. Expanding National Treasury's financial tools for disaster response, as indicated by simulations, could lead to significant savings, averaging R105m in a typical year. Still, this amount can surge during severe shocks, potentially reaching as much as R7.5bn in years marked by significant disasters. Recent years have served as a reminder and a call to action for the government to secure financing proactively. The period between 2015 and 2018, during which over R11bn was spent on

9. Adapted from Swiss Re, What is parametric insurance?
10. World Bank & Government of South Africa. (2022). Disaster Risk Finance Diagnostic - South Africa

disaster relief with funds primarily mobilised ex-post, alongside the fiscal pressures experienced during the COVID-19 pandemic, underlines the urgency for the government to proactively secure financing. The reliance on ex-post mobilisation not only contributed significantly to the high cost of response, estimated at roughly 10% of GDP during the pandemic, but also highlights an escalating challenge. With deteriorating debt levels and credit ratings, the cost and feasibility of sourcing funds ex-post are becoming increasingly difficult, emphasising the need for a strategic shift towards more pre-emptive financing mechanisms to mitigate the financial strain of disaster response.

South Africa already has a sophisticated risk-layering strategy, but analyses reveal its inefficiency in the face of current climatic exposures. The Diagnostic notes that its primary shortcoming stems from an over-reliance on budget reallocations for response. Although the processes for these reallocations are transparent, they are not always prompt and entail a significant opportunity cost. This cost arises from the cancellation and postponement of crucial projects intended to deliver necessary social and economic outcomes and labour intensity of the process. Apart from budgetary reallocations, the contingency reserve is the main instrument for shock response. It is tailored to address unforeseen expenditures. However, since these are not strictly limited to natural shocks, the reserve often depletes quickly and thus becomes unavailable for disaster response, as was evident during the 2016 El Niño drought. Both budgetary mechanisms could gain from response-centred enhancements. Regarding the efficiency of reallocations, some local governments in South Africa showcase efficient contingency reserve mobilisation that helps them reduce the cost of response. For instance, the Eastern Cape Provincial Treasury (ECPT) has adopted a budgetary mechanism where provincial departments are mandated to set aside 2% of their allocated budgets for disaster management and response initiatives. This approach ensures dedicated funding for preparedness, mitigation, response and recovery efforts and can complement other financial mechanisms to reduce strain on the national budget and enhance overall disaster resilience. Regarding the reserve, current studies available to the government enable it to determine the size of a reserve that could be effectively earmarked for shocks. The budget response could be augmented by ring-fencing taxes, but the strategy highlights the need to diversify the sources of financing from the budget.

The national budget alone cannot be efficiently used for financing responses. South Africa is in a strong position to leverage non-budgetary mechanisms to design a robust risk-layering strategy. This includes:

- *Exploring sovereign parametric insurance*[11]. A number of countries use sovereign parametric insurance as part of a comprehensive risk layering strategy. Parametric insurance is a special type of insurance that pays out on certain triggers (eg if rainfall breaches a certain threshold). It is particularly useful for insuring against "tail risk" events, such as one-in-one hundred-year floods or droughts (see Box). This requires balancing the immediate budgetary cost of a premium versus a potential payment in case of an extreme event.
- *Exploring contingency funding from markets beyond the budget reserves.* The contingency reserve is used to pre-emptively allocate money for disasters. It is, however, often used for a variety of other in-year expenditure pressures. In addition, South Africa maintains significant cash reserves which have a high opportunity cost; a more efficient strategy could be to have contingent credit in place and reduce the amount of cash reserves.
- *Expanding the coverage of indemnity insurance for public assets.* South Africa's well-developed insurance sector provides an opportunity to cover some of the risks associated with public assets, particularly in high-risk areas. By engaging with the insurance industry, the government can transfer some of the risks associated with public assets such as infrastructure and government buildings, especially in high-risk areas, to the private sector. This could also involve working with entities like the Department of Environmental Affairs (DEA) and Provincial Disaster Management Centres (PDMC) to address spatial vulnerability and agree on specific actions for high-risk assets. This risk transfer can streamline the budgeting processes for unexpected events and ensure prompt allocation of funds during emergencies, thereby safeguarding vulnerable sections of the population and key economic sectors. Furthermore, appropriately structured insurance can create the right incentives for maintaining and safeguarding public assets. For example, insurance policies often have requirements for risk mitigation, such as the installation of fire alarms in buildings. However, municipalities often struggle with maintaining consistent insurance coverage, largely because they must use their maintenance budgets

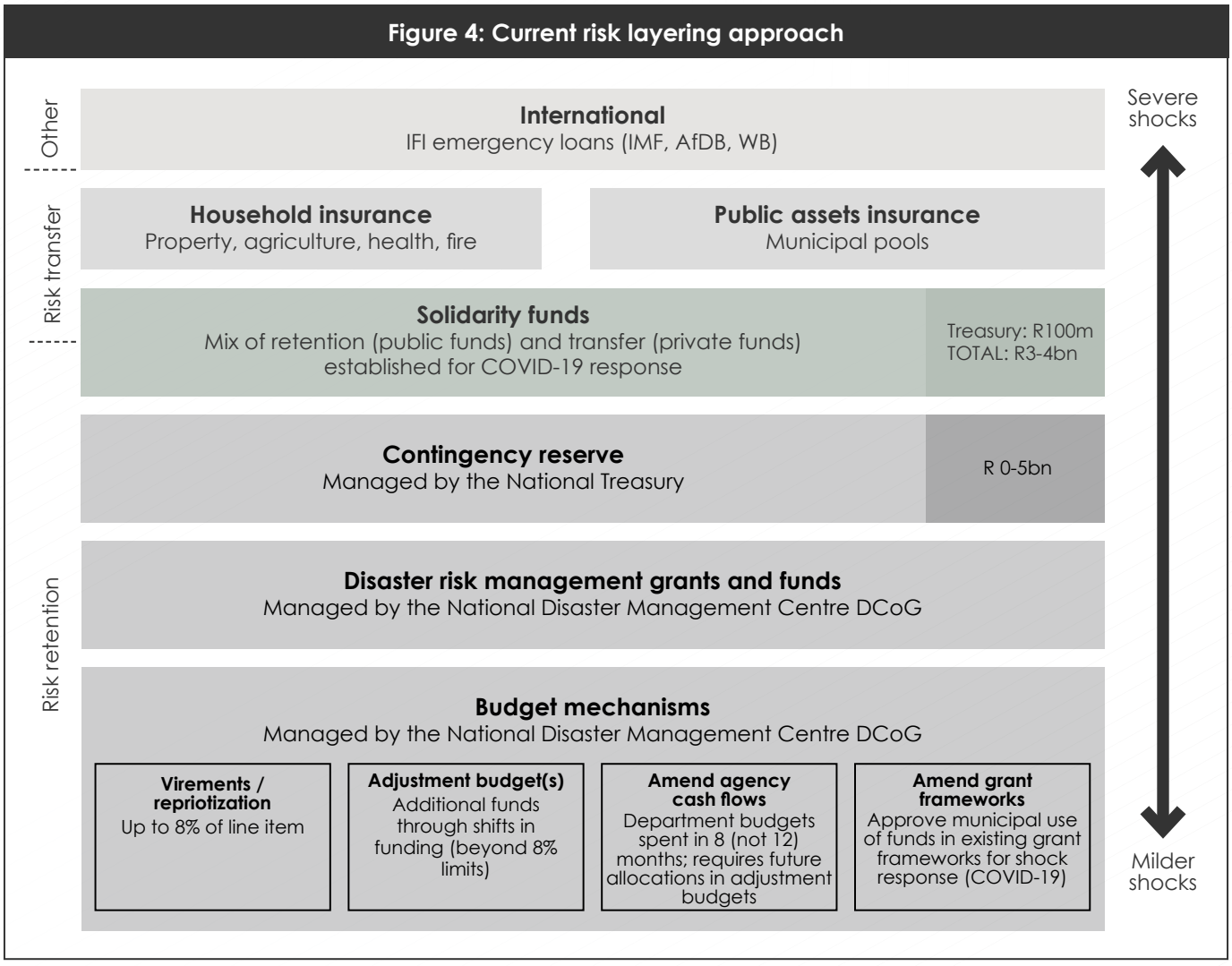
11. South Africa could also issue a catastrophe bond, which would have the same outcome (payment of a premium for funds only available upon a catastrophic event), but this instrument entails complex documentation and large transaction costs).

to respond to immediate shocks[12]. This is not rooted in legislation but stems from the practical constraints of budget allocation and management at the municipal level. As a result, municipalities might find themselves in a cycle where the necessity to respond to immediate shocks impedes their ability to maintain and safeguard public assets, which undermines their insurability. In contrast, relying solely on self-insurance can lead to moral hazard, where there is little incentive for the custodians of assets to properly maintain them (see box on the fire at Parliament).

— *Encourage the coverage of insurance to affected households and businesses.* Currently, the fiscus is implicitly at risk for the costs of disasters and emergencies that affect these businesses and households. Moreover, by improving the market for privately held insurance, especially among vulnerable groups and businesses, the government can reduce its implicit liabilities in the event of a disaster. Options in this regard are to create sovereign-backed credit insurance. Another option includes adopting strategies deployed in other African countries that entail subsidies or incentives to help cover insurance premiums for vulnerable populations, which could also be supported by NGOs or development partners. A prominent example is the Index-Based Livestock Insurance in the Horn of Africa, where government and donor subsidies assist pastoralists in managing drought-related risks.

In addition to the above, consideration should be given to earmarking a limited, yet strategic portion of funds for response to frequently recurring shocks. While this may have implications in terms of opportunity cost, this can enhance readiness for more predictable disasters, ensuring that resources are available for immediate response without further compromising funding for strategic projects.

Figure 4: Current risk layering approach



12. The insurance sector often denies claims on assets where scheduled maintenance has not been performed, in addition to the issues of routine maintenance mentioned. This presents a significant gap, as maintenance requirements may not be met due to insufficient budgetary allocations for the Infrastructure Asset Portfolio's maintenance needs. This underscores the critical need for adequate funding and strategic planning to ensure that maintenance schedules are adhered to, maintaining the insurability of assets and mitigating the risk of claim denial.

The 2023 Morocco Earthquake triggered parametric insurance

Morocco was hit by an earthquake in September 2023 of a scale of 6.8, affecting more than 300,000 people in Marrakesh and surrounding areas. The direct physical damages from this disaster are estimated at US$3bn (2.6% of GDP).

Since 2020, Morocco has subscribed to parametric insurance from a group of 20 international reinsurers to insure earthquake risk. This product had a maximum payout of US$275m per annum, and an excess of US$25m (ie should the loss be under US$25m the insurance would not pay). Given the severity of the shock as measured in the difference between the index in the contract and the effective one, Morocco received the maximum payout in October 2023. This result stems from a decade of building financial resilience to disasters and transferring risks to the private sector. In Morocco, national insurers offer a catastrophe cover in property insurance to allow insured households to be covered against disasters. For those who are not insured a Solidarity Fund was created; it relies on a parafiscal tax on non-life insurance policies, generating between US$20m and US$25m per year, enabling accumulation of reserves and the purchase of insurance for excess losses.

Hence the Solidarity Fund was able to use its accumulated reserves and the proceeds of the parametric insurance to compensate the victims which provided the bulk of the response.

https://blogs.worldbank.org/arabvoices/morocco-mobilizing-financial-sector-improved-resilience-against-disasters-and-climate

Table 1: Steps to strengthen the risk layering approach

Fiscal risk layer	Response	Description	Next step	Responsibility
Tail event (eg 1–100-year flood) that cannot be funded from fiscus	Parametric insurance together with open emergency credit lines.	Access appropriate parametric insurance and contingent credit (eg ARC or IFI).	Engage with IFIs on these.	NT (ALM and IREP)
Household insurance	Legal framework for appropriate insurance products.	Risks faced by individual households due to disasters.	Microinsurance framework Use of credit guarantee vehicles.	NT (FSPU) and FSCA
Corporate insurance	Legal framework for appropriate insurance products.	Risks to corporate assets and business interruption.	Business interruption insurance, risk-pooling mechanisms.	NT (FSPU) and FSCA
Public asset insurance	Use indemnity insurance products where possible for insuring public assets.	Insurance products to protect key government assets (eg buildings) from risk.	Amend regulations that encourage "self-insurance" Programme of identification of assets in high risk zones and risk management plans.	NT PFMA
Contingency reserve	Set the contingency reserve at an appropriate level.	Ensure that a portion of the contingency reserve is ringfenced.	Undertake a risk analysis to establish appropriate disaster related contingency reserve.	NT Budget Office
Contingent credit	Enter into contingent credit agreement.	Consider contingent credit to reduce the opportunity cost of maintaining high cash reserves.	Analysis of the opportunity costs of contingent credit versus reserves.	NT

Substantial savings could be realised by enhancing the risk-layering strategy. The Diagnostic compares the current strategy which consists of reserve funds of R1.3bn and budget reallocations against two more robust risk-layering strategies. The first (Strategy B) consists of a reserve fund of R3bn contingent credit of R7.5bn, and sovereign insurance with a maximum payout of R13.1bn and a ceding share of 50%. The second strategy (Strategy C) is the same as Strategy B but with a ceding share of 100% for the insurance. On average these strategies save up to R135m; for more extreme shocks, however, the savings increase considerably. The cost savings of Strategy C for a one-in-fifty-year event (loss size of about R22.5bn) are approximately R7.5bn. Based on these indicative results, a more in-depth financial modelling and technical analysis should be carried out to right-size the potential financial instruments that National Treasury could consider.

Implementing more robust risk-layering strategies, including a mix of reserve funds, contingent credit and sovereign insurance, can lead to significant cost savings for South Africa. Strategy C's potential to save approximately R7.5bn in the event of a one-in-fifty-year disaster underscores the importance of in-depth financial modelling to optimise National Treasury's approach to disaster risk financing.

Recommendations

Priority 1 emphasises a risk-based approach, collaboration with financial institutions, legislative improvements and capacity building. Key recommendations include mapping fiscal risks with a focus on vulnerable groups, identifying and implementing tailored financing strategies, and selecting appropriate instruments for a holistic risk layering strategy by the National Treasury (NT) by the Medium Term Budget Policy Statement (MTBPS). Additionally, it calls for strengthening partnerships with private and international entities, enhancing legal frameworks, and developing government expertise on financial instruments through training and continuous learning systems led by NT and the Government Technical Advisory Centre (GTAC), aiming for completion by BR2025. This comprehensive approach seeks to fortify South Africa's financial resilience against disasters, ensuring a robust, adaptive, and inclusive financial strategy.

Main recommendations	Details	Responsibility	Timeline
Implement a risk-based approach to disaster risk financing	Map fiscal risks, focusing on the most vulnerable groups in society.	NT (Budget Office)	MTBPS
	Identify an appropriate financing strategy for each risk, including the cost and benefits of various financial instruments and budgetary mechanisms.	NT (ALM)	MTBPS
	Choose appropriate instruments for each risk, forming a holistic strategy that covers all types of shocks {risk layering strategy}.	NT	MTBPS
Collaborate with financial institutions and improve legislation and regulation	Select appropriate private-sector counterparties for insuring against risk.	NT (FSPU)	MTBPS
	Work with relevant multilateral and bilateral partners for access to new, affordable contingent financing	NT (ALM/IREP)	MTBPS
	Improve the legislative and regulatory framework for disaster risk financing.	NT (Legislation)	MTBPS/ BR2025
Enhance capacity around strategic financial instruments	Develop and implement training on DRF instruments for government stakeholders.	NT GTAC	BR2025
	Engage with specialised partners or build dedicated teams for certain instruments.	NT GTAC	BR2025
	Ensure up-to-date knowledge on instruments and feedback mechanisms for stakeholders.	NT GTAC	BR2025
Create a learning system	Establish a system for continuous learning and improvement for each of the instruments.	NT GTAC	BR2025
	Periodically review each component of the strategy.	NT GTAC	BR2025

Incorporating index insurance into the risk layering strategy of Medellin, Colombia

Medellín's journey toward developing a robust risk layering strategy, grounded in objective data and bespoke triggers, can serve as a learning experience for South African municipalities that share similar challenges in terms of fast access to finance and data shortcomings. In 2016, Medellín initiated its Resilience Strategy with a focus on creating risk transfer solutions for natural disasters through innovative insurance strategies. The strategy involved i) assessing and quantifying disaster risks, ii) defining liabilities, and iii) designing a comprehensive financing approach that considered both the frequency and severity of potential events.

This pioneering effort in Medellín became part of a broader Disaster Risk Financing initiative of Colombia supported by the World Bank's DRFI program, Medellín's engagement with the private sector and development partners. The collaboration aimed to develop parametric insurance products tailored to Medellín's unique landscape and climate, providing swift payouts based on pre-agreed triggers for an immediate response to disasters.

One of the primary goals was to enhance the city's financial resilience by strengthening the risk layering strategy and transferring the long-tail risks of natural disasters to the market through parametric insurance products. Unlike indemnity insurance, parametric products allowed for a broad-range solution that correlated with the needs of the local fiscus rather than specific losses. This approach also helped overcome some of the data gaps that made the use of indemnity products difficult.

As a result, triggers for the following shocks were developed: flooding, landslides and earthquakes. They leveraged local data from the ground and satellite. Since parametric products had not been used in such a context before in Colombia, legal templates and manuals establishing a common language for all stakeholders were developed before the products were implemented. Parametric insurance has already proven successful in another project in Colombia, with the programme paying out US$3m in 2022 to 6,475 smallholder coffee farmers out of the 8,000 it covered.

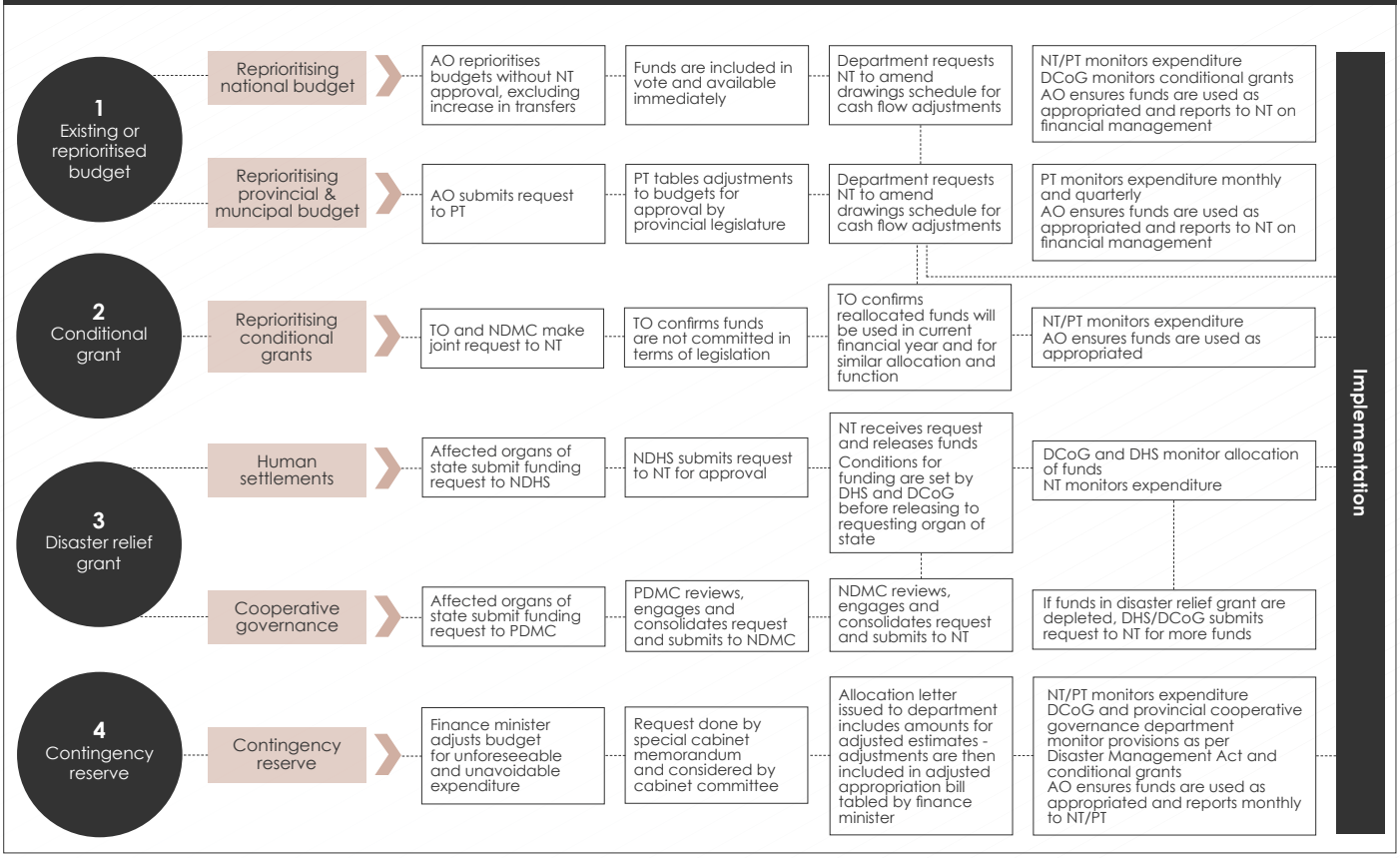
Priority 2: Improve the distribution of funds

This priority area aims to strengthen governance and coordination among the three spheres of government, communities, and businesses to respond effectively.

A strong and agile coordination mechanism is required to ensure the system is efficient. South Africa's decentralised system is a source of strength in response to disasters. However, analyses conducted by the government show that the current system is often not designed in a response-efficiency-centred manner and fails in timeliness. Improvements are especially needed in terms of supporting local governments, which are at the forefront of response activities.

The Diagnostic highlighted the need for improvements to the grant mechanism. These include the Disaster Relief Grant and Disaster Recovery Grant, overseen by the National Disaster Management Centre. Currently, there are areas where inter-governmental coordination and capacity is lacking, which undermines the swiftness of fund allocation, especially to local governments. Enhancing the efficiency of inter-governmental transfers will be a multifaceted process relying on improved trust between institutions, task streamlining and a revision of the incentive system that emphasises preparedness over reactive measures. These necessary changes must not compromise the National Treasury's commitment to transparency. Overlapping checks and reporting requirements need to be streamlined, and in some cases, outsourced to specialised, pre-selected and pre-agreed institutions.

Figure 4: Process of grant dissemination at the time of a disaster



Source: Auditor General South Africa (2022)

Coordination improvements need to extend beyond the government to include non-governmental institutions and the private sector. Only then can rapid assistance to vulnerable groups be managed effectively. Based on the governmental assessment, 86% of South African settlements are at significant risk from fires[13]. Recovery often depends on a patchwork of informal institutions that emerge after a disaster, which complicates the efficient allocation of financial resources and the implementation of effective fire response measures. In economic terms, agricultural businesses, which constitute one of South Africa's most strategically important sectors, are not adequately integrated into the disaster response system. There are market failures where producers get small amount of profit compared to retailers and intermediaries but bear the risk. The government recognises the importance of improving its ability to rapidly identify stresses in this sector, followed by prompt financial interventions. Without such measures, drought-induced food price hikes especially in staples like maize, heavily burden low-income households.

The protection of businesses and, consequently, jobs amid shocks is of strategic importance and needs to extend beyond the agricultural sectors. A robust private sector is paramount to the resilience of the economy and citizens' well-being. There are numerous examples where, in the face of natural shocks, businesses had to close or reduce operations, leading to staff layoffs. For instance, the Knysna fires of 2017 directly impacted 134 businesses, resulting in job losses. The drought in the Free State devastated agricultural SMEs, with 80% reducing their workforce by over half, and nearly all of them experiencing losses of more than 50% of their revenue. A more recent example is the eThekwini floods, which disrupted the operations of significant international production plants, jeopardising not only jobs but also the attractiveness of the region as an investment destination.

The current system for disaster management

The main source of funds available to municipal and provincial disaster management is through two conditional grants, the Disaster Relief Grant and Disaster Recovery Grant, administered by the National Disaster Management Centre in consultation with National Treasury.

These disaster grants are meant to be utilised exclusively for post-disaster financing and have different allocation and utilisation parameters. There are numerous areas where the coordination of different levels of government could be improved. They include faster allocation of funds, improved coordination and trust, elimination of duplicating tasks and creation of an incentive system that prioritises preparedness over response.

A report from the Auditor General of South Africa (AGSA) on the 2022 Floods in KwaZulu-Natal and the Eastern Cape recommended several areas of improvement relating to disaster management. These include ensuring a timelier response, strengthening the system of intergovernmental coordination and improving effectiveness of funds and resources. Most notable, however, were recommendations to improve disaster preparedness. These include physical preparedness (mainly through adequately maintaining and strengthening of infrastructure), event preparedness (eg having fire drills and disaster simulations), as well as financial preparedness – setting aside appropriate funds in advance for possible disasters, based on an understanding of past events. Finally, the AG recommends streamlining the process of grant dissemination (see also Figure 3).

South Africa's approach relies heavily on use of the emergency funding provisions in the Public Finance Management Act (PFMA). Sections 16 and 25 of the PFMA govern the use of funds in emergency situations for the national and provincial governments respectively. These sections allow for "expenditure of an exceptional nature which is currently not provided for and which cannot, without serious prejudice to the public interest, be postponed to a future parliamentary appropriation of funds."

Yet, experiences from the City of Cape Town reveal a significant challenge: disaster spending, especially in the emergency response or pre-disaster declaration stage, is often classified as irregular expenditure, with individuals held personally accountable. This is potentially influenced by interpretations of the MFMA, which can undermine the prompt budget reallocation in times of urgency. To enhance responsiveness and

13. World Bank & Government of South Africa. (2022). Disaster Risk Finance Diagnostic - South Africa

minimise loss and damage, a re-evaluation of the MFMA may be necessary to accommodate the need for urgency and agility in disaster response strategies.

Protecting businesses is a multifaceted exercise, which needs to focus on creating an environment where they are incentivised to build resilience to shocks. Only in relatively rare cases should the state assume the risk of businesses. However, the state might need to play a role in safeguarding the business environment by being able to repair critical infrastructure from a business perspective, such as transport routes, ports and airports among others.

Lastly, the private sector should be incentivised to innovate in financial resilience to shocks. These could include tax incentives and/or grant mechanisms to encourage investment in adaptation and resilience projects. Grants could subsidise the development and implementation of new technologies, practices, or solutions that contribute to mitigating the impacts of climate change on businesses and communities. The emergence of startups, especially in fintech and monitoring, underscores the potential of businesses in building financial resilience. While coordinating actions between the private and public sectors is challenging, the immense potential of the South African private sector to innovate needs to be leveraged. This includes learning, collaboration and handing over some responsibilities for risk retention to the private domain.

Lessons from the loan guarantee scheme

During the COVID-19 pandemic, the National Treasury implemented a loan guarantee scheme to assist small businesses. This initiative provided crucial financial support by offering loans, helping these businesses manage cash flow challenges, sustain operations and retain employees during the unprecedented economic disruptions caused by the pandemic. In response to the riots in KwaZulu-Natal, the loan guarantee scheme was extended. This strategic decision aimed to bolster businesses affected by the unrest, providing vital financial support for reconstruction and recovery. The extension underscored the government's commitment to stabilising the economy and supporting enterprises through challenging times. The scheme provides a useful way of supporting lending during difficult times.

Drawing on this experience, there is potential to explore financial products tailored to informal enterprises. Instruments such as disaster stokvels – community-based savings clubs – or enhancing informal risk-sharing arrangements. These schemes can play a pivotal role in acting as a buffer against shocks for informal enterprises, which typically lack access to traditional financial services. Additionally, these could ideally be complemented with affordable micro-insurance products. Here, there's potential for leveraging the NGO/NPO sector or civil society organisations as distribution channels to increase the reach and effectiveness of financial support.

Recommendations

Key recommendations under priority 2 focus on revising the grant system to enhance efficiency and support for critical businesses during shocks. The strategy involves thoroughly reviewing existing grant frameworks, such as the Municipal Grant Framework, to address inefficiencies and implement objective triggers for relief grants. It also suggests incentivising disaster risk reduction and asset maintenance within these grants, overseen by the National Treasury-Intergovernmental Relations (NT-IGR) as part of the Conditional Grant review by Budget Review 2025 (BR2025). The National Treasury-Cooperative Governance and Traditional Affairs (NT-COGTA) is tasked with clarifying roles to avoid duplications and expediting decision-making.

Additionally, identifying and supporting key businesses, especially small enterprises vulnerable to shocks, is essential for economic stability and job preservation among vulnerable groups. This includes maintaining a database of these businesses and providing benefits like tax breaks and guarantee schemes, a responsibility shared between the Department of Trade, Industry and Competition (DTIC), Small Enterprise Finance Agency (SEFA), Khula, and the National Treasury-Tax and Financial Sector Policy (NT-TFSP). This multifaceted approach aims to bolster South Africa's resilience and recovery capabilities in the face of disasters.

Main recommendations	Details	Responsibility	Timeline
Revise the grant system and reinforce it with emergency response regulations	Review grant frameworks, including the Municipal Grant Framework, and emergency grants with local governments to eliminate inefficiencies, leakages, and bottlenecks. Consider objective and parametric triggers to relief grants. Consider including incentives for disaster risk reduction and asset maintenance in ongoing non-relief grants. This could be linked to information sharing on the effective maintenance of assets.	NT-IGR as part of the Conditional Grant review	BR2025
	Define roles of relevant stakeholders to eliminate duplications and speed up the decision-making process while maintaining transparency.	NT-COGTA	
Support key businesses during shocks	Identify businesses critical for the economy and vulnerable to shocks. Create a strategy for protecting small businesses important for the well-being and jobs of vulnerable groups, especially those lacking access to market-based resilience mechanisms. Maintain a database of such small businesses.	DTIC/SEFA/Khula	
	Create benefits such as tax breaks, grants and guarantee schemes to promote businesses contributing to South Africa's resilience.	NT-TFSP	

Priority 3: Enhance data collection and management

This priority area aims to enhance data collection for better budgeting and efficient risk management.

Data is critical for an appropriate response to disasters. A data management strategy is fundamental for all components aimed at enhancing financial robustness in the face of disasters. This is also recognised in the Sendai Framework for Disaster Risk Reduction (SFDRR) 2015-2030, which stresses the importance of disaster risk information and assessments as key elements in understanding and reducing disaster risk[14]. The framework recognises the critical role of data in disaster response, which is emphasised through the advocacy for comprehensive disaster risk management strategies that integrate high-quality data at all stages. The framework underscores the importance of enhanced data sharing and dissemination, making risk information accessible to all stakeholders – governments, communities, businesses, and individuals. Additionally, the framework highlights the significance of technology and innovation, such as GIS and remote sensing, in improving data collection and management, thereby strengthening the capabilities and infrastructure for effective disaster risk reduction.

While South Africa is a signatory to the Sendai Framework, it currently grapples with significant data gaps. First, there are six major global open-access disaster loss databases that provide data for South Africa[15]. These databases record disaster occurrences, damages, losses and impacts, aligning SFDRR 2015-2030 monitoring minimum requirements. However, the databases predominantly focus on large-scale events, often requiring significant casualties, evacuations, or international aid for inclusion. This results in overlooked smaller-scale disasters, skewing the perception of actual risks and challenges in South Africa. Such inconsistencies impede the creation of effective, customised disaster risk reduction strategies and policies. Second, on a national level, South Africa lacks a centralised or national repository for information on disaster-induced losses, damages, and expenditures which complicates forecasting and accurate budgeting for contingencies. In 2018, the National Disaster Management Centre (NDMC) developed the Disaster Atlas Application, but this only covers disasters from February 2006 to March 2017 and has not been updated for recent events such as the Knysna wildfires in 2017[16]. To address these data gaps, national sector departments and various organisations have created their own databases. The South African Weather Service (SEWS) maintains the CAELUM database for extreme historical events, but it is a restricted commercial product. Data from private insurance companies on disaster recovery costs and economic impacts is also valuable, yet collaboration is limited by scarce public-private partnerships. This results in a gap in the overall disaster-affected assets record, as properties insured privately are managed outside of governmental disaster declarations.

Better management of state assets - Parliament as a case study

In January 2022, a fire broke out at the parliamentary complex in Cape Town. This blaze, which lasted for several days, caused extensive damage to the historic complex, including the National Assembly chamber. Authorities arrested a suspect for suspected arson. It appears that there was insufficient security at the complex. Moreover, some reports suggest a lack of adequate fire prevention, eg fire doors.

Currently, many state assets such as parliament are "self-insured", that is, the state carries the cost of any damages. Self-insurance is viable when assets have a relatively small value and their exposure to risks is not correlated. In situations where assets are of significant value or exposed to correlated or catastrophic risks, self-insurance can lead to substantial shocks to the budget. In these instances, transferring risk through insurance mitigates potential financial impacts on the state's budget and brings other benefits, particularly as the insurer may insist on enhanced building maintenance and proactive risk mitigation.

14. https://www.preventionweb.net/files/43291_sendaiframeworkfordrren.pdf
15. These include: United Nations Desinventar Sendai, Global SDG Indicators Database, NatCatSERVICE, Sigma, Global Disaster Indentifier Number, Global Risk Data Platform and EM-DAT.
16. https://www.frontiersin.org/articles/10.3389/fclim.2021.591020/pdf?isPublishedV2=False

Data fragmentation needs to be reduced. The NDMC maintains a GIS system for historically declared disasters. While this represents a useful tool for analysing the impact of historically declared disasters, significant challenges persist in linking this data with disaster relief funding. One prominent challenge in improving risk management, mitigation and disaster loss reporting is the fragmentation of data, unavailability, or poor quality. Despite increasing efforts to publish disaster loss data, problems persist in terms of open access, integration and reuse. This is primarily due to interoperability barriers, which make it difficult to work with and combine different datasets. The lack of systematic and standardised data reporting on disasters weakens the foundation for long-term disaster planning. A comparative study of disaster-related mortality data from EM-DAT and South Africa's Vital Statistics (StatsSA) for 1997-2016 highlights these issues. The two databases report vastly different death tolls and causes, with EM-DAT focusing on epidemics and floods, and StatsSA on lightning strikes and cold extremes, due to varied data sources and classification methods. Such inconsistencies in data reporting hinder accurate disaster assessment and response. There is a pressing need for improved, standardised data collection and open access to bridge the gap between the NDMC's GIS data and disaster relief funding

Another key weakness in data systems and collection that limits disaster data with DRF is the absence of asset maintenance records. Currently, some public institutions can limit access to information on the maintenance of assets and levels of preparedness. This makes insuring public assets either prohibitively expensive or impossible. Additionally, the absence of a centralised or national repository for information on disaster-induced losses, damages, and expenditures complicates forecasting and accurate budgeting for contingencies. Improved budgeting, through strategies such as disaster targeting, could therefore serve as a substantial enhancement to the budgeting process and enable the government to transfer its risk more effectively.

There are several strategies and programmes the government can leverage to improve data management. Firstly, the government of South Africa is considering the establishment of a national database that catalogues impacts and expenditures related to disasters. A team of programmers and researchers at South Africa Environmental Observation Network (SAEON) have developed a prototype of a web-based national hazards events (NHE) database to address the gaps in national and international disaster reporting. The NHE will be an open-access database designed to enhance understanding of the effects of various events on people, infrastructure, and different economic sectors. It features a dashboard of location maps, charts, and other visual tools that provide detailed information on impacted areas, the number of disasters, allocated funding, injuries and fatalities. The data, including historical events, are presented in a timeline format, offering insights into the frequency and impact of hazardous events over time. Currently, the NHE primarily contains data on disasters declared by the NDMC. Future development plans for the database include forming data-sharing partnerships with government entities like the NDMC and private-sector insurance companies.

Enhancing procurement disclosure

Given South Africa's history of state capture, it is important to ensure that funds allocated for disaster relief are ultimately spent appropriately. One part of this is to ensure appropriate procurement rules. A second part is to enhance disclosure of how money is spent.

The example of enhanced procurement disclosure following COVID-19 is instructive. After the COVID-19 pandemic, both Gauteng and the Western Cape implemented measures to disclose procurement related to COVID-19-related expenditures. Gauteng released regular reports covering COVID-19 procurement transactions. The report included the Gauteng provincial departments, entities, and eight delegated municipalities and detailed COVID-19 payments per institution. The Western Cape's Provincial Treasury was the first in South Africa to publish regular procurement disclosure reports. These reports include details of all COVID-19 procurement by the Western Cape Government departments and entities. They particularly focus on personal protective equipment (PPE) procurement and expenditure.

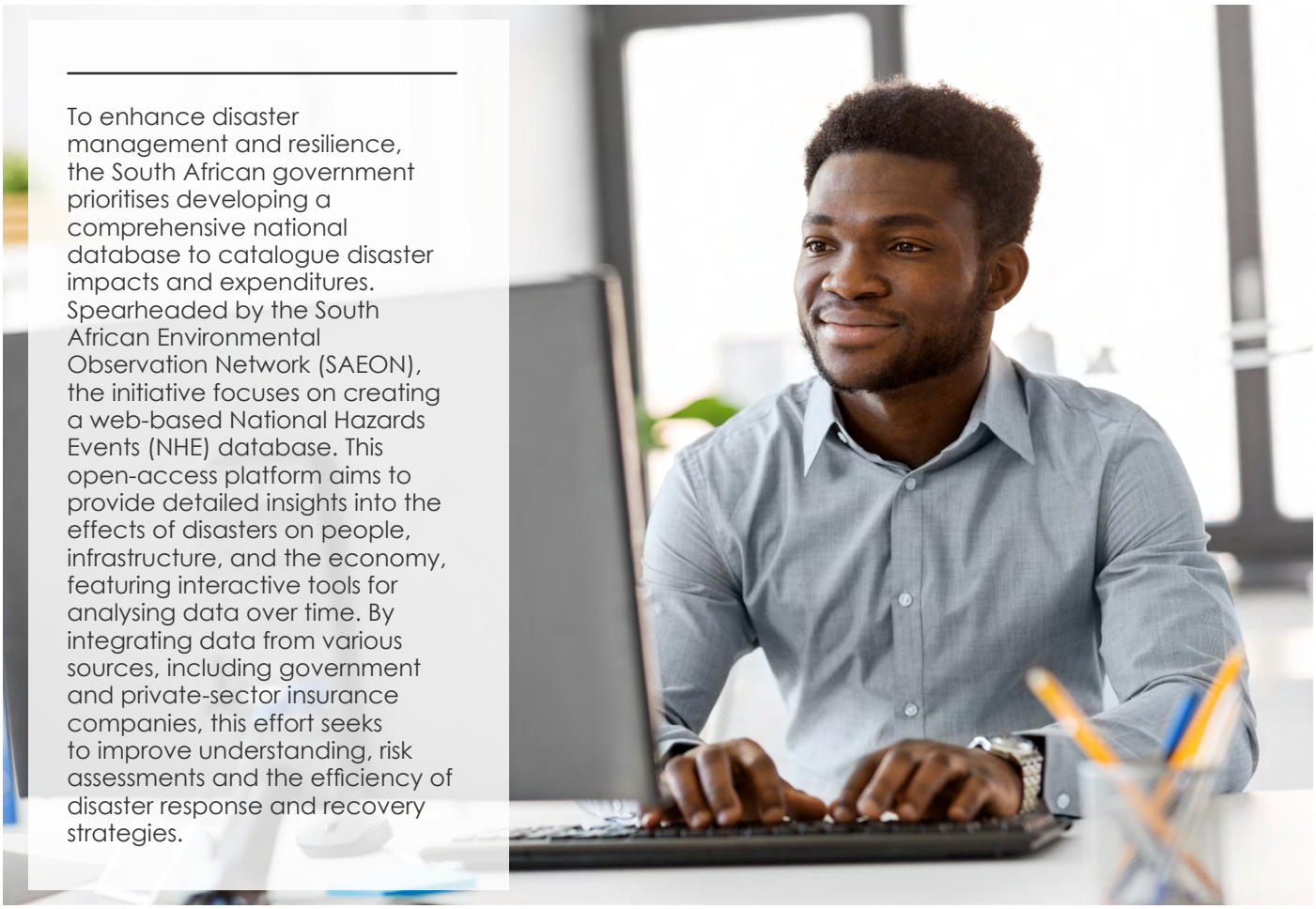
Second, the government needs to collaborate with the insurance sector to leverage the valuable data companies possess. This is crucial for obtaining insights into the financial repercussions of disasters, including detailed information on claims and payouts related to property and asset damages. Sharing and integrating this data with central databases can enhance the credibility of risk assessments, improve disaster response strategies, and facilitate more effective planning and allocation of resources for future

emergencies. However, this needs to be done in a way that respects the proprietary information of the industry, ensuring that such collaboration does not undermine the sector. Yet, it is in the collective interest of the industry and South Africa's resilience for certain data to be shared, and it is the state's role to coordinate this exchange. Private and public sector collaboration can also foster the development of innovative insurance products and risk mitigation strategies that are more closely aligned with national disaster management goals. Additionally, this collaboration can facilitate the development of new insurance instruments and their pricing, that is essential for expanding insurance coverage to households affected by disasters.

Third, the government recognises the potential benefits of developing a comprehensive database focused on micro, small, and medium enterprises (MSMEs) to better gauge their exposure and potential damage to the economy due to shocks. Given the costs, this will be considered as a more medium-term objective. This would enable the creation of mechanisms to either internalise some of this risk or incentivise resilience-building among precisely identified firms. Such a database would encompass crucial details about the MSMEs, such as their annual revenue, workforce size, and primary sector or activity. While the level of informality among South African MSMEs poses a challenge to this exercise and will inevitably undermine the quality of the database, the fact that the sector employs nearly a third of all employed South Africans, especially the most vulnerable members of society, makes it necessary to include it. This could then be augmented by an analysis of their strategic importance and susceptibility to shocks. Such a database would lay the groundwork for a system where the swift and effective disbursement of funds, grants, or loans becomes significantly more streamlined.

Building on the discussion of social costs (see *Social and economic inequality*), it is important to ensure that the database and subsequent analyses consider disaggregated data, particularly for vulnerable groups – women, youth, the elderly and people with disabilities. This would enable gender budget tagging in overall expenditure and develop an understanding of the compounded social and economic impact of disasters on these groups. To accommodate this level of data gathering, it might be necessary to develop a separate framework for integrating this disaggregated data.

To enhance disaster management and resilience, the South African government prioritises developing a comprehensive national database to catalogue disaster impacts and expenditures. Spearheaded by the South African Environmental Observation Network (SAEON), the initiative focuses on creating a web-based National Hazards Events (NHE) database. This open-access platform aims to provide detailed insights into the effects of disasters on people, infrastructure, and the economy, featuring interactive tools for analysing data over time. By integrating data from various sources, including government and private-sector insurance companies, this effort seeks to improve understanding, risk assessments and the efficiency of disaster response and recovery strategies.



Recommendations

Main recommendations	Details	Responsibility	Timeline
Build a data strategy linking data types with activities	Identify data needs across DRF activities, including data for a disaster risk layering strategy and budgeting for contingencies.	NDMC / NT	BR2025
	Create a data inventory to store data in an accessible and scalable manner.	NT, NDMC with SAWS and provincial and local disaster management centres	
	Establish a strong data protocol for data protection and maximising usefulness.	NDMC	
	Consider the incorporation of budget tagging for enhanced tracking and allocation of funds in disaster-related expenditures.	NT	
Designate entities for data collection	Define entities responsible for data collection and assign responsibilities.	NDMC/SAWS/ StatsSA	
	Establish a framework for coordination between agencies for data access and exchange, with input from provincial and local governments.	NT/ NDMC as well as provincial and local disaster management centres	
	Integrate the private sector's know-how, data collection capacity, and technology.	Private insurance companies/ ASISA	
	Foster partnerships with insurance companies (building on, for instance, Santam's Partnership for Risk and Resilience programme[17]) to gain access to risk assessment and financial impact data.	ASISA/NDMC/StatsSA	
Ensure sustainability of the data process	Commit long-term government funding to data projects to avoid value-undermining interruptions.	NT	
	Train personnel responsible for data collection, processing, and users.	NDMC/StatsSA, along with provincial and local disaster management centres	
	Implement a strong performance monitoring framework for constant quality monitoring of data processing and usage.	NDMC	
Promote the development of open standards to ensure interoperability between different data systems	Coordinate with international organisations, insurance companies and other agencies to benefit from global best practices and innovations in data interoperability.	NDMC/ NT/ Insurance companies/ UN organisations	
	Confirm standards for loss and damage claims in architecture of database.	NDMC/ NT/ Insurance companies/ UN organisations	

17. santam.co.za/media/rljnyiap/bkl-17112-santam-p4rr_r14-edit-v3.pdf

Conclusion

This strategy outlines a programme of work derived from the Diagnostic conducted by the World Bank and National Treasury. It aims to offer actionable recommendations to enhance the ability of the fiscus and government institutions to absorb disaster-related shocks, improve financial resilience and maintain economic stability in the face of disasters. These recommendations centre around a key challenge in South Africa's disaster risk financing approach, identified in the Diagnostic: the overreliance on budget mechanisms for disaster response, which undermines the ability to absorb and deal with shocks of increasing severity.

This strategy articulates three main priorities: increasing fund availability, optimising fund distribution, and improving disaster-related data collection. To address the need for a diversified financing portfolio, the strategy advocates for a broader mix of financing options beyond relying on the fiscus, such as contingent funds and insurance, potentially sourced from private insurance companies or multilateral financial institutions, donors or philanthropic foundations. It explores the potential of mandatory contingency budgeting for provinces, contingent credit lines and potentially engaging with DFIs to address significant damages. The second priority emphasises refining the state's capacity to efficiently allocate funds. This requires a review of the grant system for disasters to eliminate inefficiencies and support critical business sectors during and after disasters. It also underscores the importance of incentivising the maintenance and safeguarding of public assets to ensure their insurability and promote efficient budgeting processes. The third priority highlights the critical role of data management and collection enhancements in shaping informed, data-driven strategies for disaster response. The report underscores the necessity for collaboration with private insurance firms and database managers to establish a national data repository for disaster-induced impacts. Such a database would inform the development of innovative insurance products and their pricing, thereby extending coverage to disaster-affected households.

In conclusion, the recommendations presented in this report aim to reinforce South Africa's financial and institutional resilience against disasters. The strategy calls for a comprehensive risk-layering approach that integrates various financial mechanisms, including assessing alternative sources of finance like solidarity funds and the use of traditional lending. It aims to protect South Africa's fiscal integrity and ensure the safety and well-being of its citizens amidst an increasingly volatile landscape.

Stakeholders consulted

Stakeholder	Role
National Treasury	Overall strategy owner and implementer
Financial & Fiscal Commission	Advisory role in determining revenue division and budget planning
Various government departments	Will have information on the people affected and can advise on how quickly funds should be sent
Provincial treasuries	Manage response finances and implement provincial strategies
Municipal parastatals	Main response activity implementers
Municipalities	Main response coordinators and responsible for raising additional funds
Insurers and reinsurers	Critical to mobilise private finance for disaster responses
Private business associations	Key partners to help with timely and cost effective responses
NGOs	Participate in response and data collection efforts