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EQUITABLE GROWTH, FINANCE & INSTITUTIONS INSIGHT

# Disaster Resilient and Responsive Public Financial Management: An Assessment Tool

Disaster Risk Financing & Insurance Program



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## Abbreviations

BCP	Business continuity plan
CFA	Central finance agency
DR	Disaster recovery
DRM	Disaster risk management
DRR	Disaster resilience and responsiveness
DRR-PFM	Disaster resilient and responsive public financial management
PEFA	Public Expenditure and Financial Accountability
PFM	Public financial management



# Disaster Resilient and Responsive Public Financial Management Assessment

The Disaster Resilient and Responsive Public Financial Management (DRR-PFM) Assessment is designed to help countries strengthen the capability of their Public Financial Management (PFM) systems to prepare for, respond to, and recover from disasters. The DRR-PFM Assessment expands upon an analytical tool first developed to support resilience in nine Caribbean countries.<sup>1</sup> The updated framework integrates ex-ante risk reduction explicitly;

it considers how central finance agencies can use risk analysis to inform their risk reduction, response, and recovery planning. The DRR-PFM Assessment identifies opportunities for reforms to laws, regulations, policies, and systems that can strengthen a country's capacity to manage disaster-related risks and sustain PFM functions after a disaster. Successive DRR-PFM assessments can track reform implementation.



1. The previous Post-Disaster PFM (PD-PFM) Review was conducted on Antigua and Barbuda, Belize, Dominica, Grenada, Guyana, Jamaica, Saint Lucia, and Saint Vincent and the Grenadines.

The DRR-PFM Assessment covers five key areas of the PFM system: planning and budgeting, public investment and asset management, budget execution and control, public procurement, audit and oversight, as well as the three cross-cutting themes of institutional arrangements, IT systems and records, and social inclusion (see Figure 1). The Assessment encompasses the central finance agencies (CFAs) as they regulate and manage core PFM functions, spending or line agencies, and oversight

institutions.<sup>2</sup> The Assessment acknowledges the need for close collaboration between central finance and national disaster management agencies to ensure adequate, effective, and inclusive preparation for, response to, and recovery from disasters. Although questions about relevant laws and regulations, strategies, and plans, are a means to understand the institutional and policy frameworks in place, in the actual application of the Assessment it is critical to understand and confirm the actual practices.

> > >

FIGURE 1 - DRR-PFM Pillars



2. CFAs include ministries of finance, treasuries, and accountant general's departments.



### PILLAR 1: DRR-PFM INSTITUTIONAL ARRANGEMENTS

**DRR-PFM Institutional Arrangements** assesses the clarity of roles and responsibilities within government for planning and managing disaster response and recovery.



### PILLAR 2: RESILIENT INFORMATION SYSTEMS AND RECORDS

**Resilient Information Systems and Records** examines how staff manage PFM functions and information systems so that they can maintain business continuity and digital records through disaster events and disruptions to normal operating conditions.



### PILLAR 3: PLANNING AND BUDGETING FOR DISASTER RISK MANAGEMENT

**Planning and Budgeting for Disaster Risk Management** examines how planning and budgeting processes can support the timely, efficient, and responsible use of funds for *ex-ante* disaster risk management and *ex-post* response and recovery activities.



### PILLAR 4: DISASTER-INFORMED PUBLIC INVESTMENT AND ASSET MANAGEMENT

**Disaster-Informed Public Investment and Asset Management** assesses the extent to which disaster risks are integrated into the investment project identification, appraisal, and selection processes. It also reviews the extent to which asset management policies integrate disaster risks.



### PILLAR 5: BUDGET MANAGEMENT, CONTROL, AND REPORTING

**Budget Management, Control, and Reporting during Disasters** focuses on the controls in place to ensure that resources for post-disaster response and recovery are used as intended in a transparent manner. This pillar also examines the extent to which financial transactions for post-disaster response and recovery can be tracked and verified *ex-post*.



### PILLAR 6: DISASTER-RESPONSIVE PUBLIC PROCUREMENT

**Disaster-Responsive Public Procurement** examines the extent to which agencies responsible for procurement have planned for expected emergency and disaster-related procurement needs.



### PILLAR 7: DISASTER-RESPONSIVE AUDIT AND OVERSIGHT

**Disaster-Responsive Audit and Oversight** examines how disaster-related expenditures are reviewed and scrutinized to ensure compliance and discourage fraud, waste, and abuse.



### PILLAR 8: SOCIAL INCLUSION

**Social Inclusion** assesses the extent to which governments identify the needs of different segments of the population and make provisions to address these needs in plans, budgets, and programs in response to disasters.

The DRR-PFM Assessment focuses on rapid onset disasters caused by natural hazards. Figure 2 presents the range of hazards. Some hazards may take many years to materialize (such as those related to climate change), others may take days (storm events) or even minutes (earthquakes). Some may follow predictable cycles (storms, floods, pest infestations), allowing time for planning and preparation, even if the exact timing and severity of the event cannot

be foreseen. The frequency and severity of meteorological and hydrological hazards will likely increase over time as a result of climate change. Some elements of the DRR-PFM Assessment would also be relevant for building institutional resilience and responsiveness for epidemics; however, the framework does not attempt to address the range of health-system considerations that one may need to consider.

> > >

**FIGURE 2 - Types of Natural Hazards**

Slow onset		Rapid onset	
<p style="text-align: center;"><b>Climate and Environmental Change</b></p> <ul style="list-style-type: none"> <li>• Changes in temperature and rainfall patterns</li> <li>• Ecosystem degradation</li> <li>• Drought</li> <li>• Rising sea levels</li> <li>• Desertification</li> <li>• Salinization</li> <li>• Thawing of glaciers and permafrost</li> </ul>	<p style="text-align: center;"><b>Biological</b></p> <ul style="list-style-type: none"> <li>• Epidemics</li> <li>• Insect and animal pest infestation</li> </ul>	<p style="text-align: center;"><b>Meteorological and Hydrological</b></p> <ul style="list-style-type: none"> <li>• Hurricanes/Tropical Cyclones</li> <li>• Storms</li> <li>• Storm surges</li> <li>• Tornados</li> <li>• Intense rainfall events</li> <li>• Heatwaves</li> <li>• Flooding</li> </ul>	<p style="text-align: center;"><b>Geophysical</b></p> <ul style="list-style-type: none"> <li>• Earthquakes</li> <li>• Tsunamis</li> <li>• Volcanic eruptions</li> </ul>

**Rapid onset hazards addressed by DRR-PFM Assessment**

The impact of natural hazards depends on the severity of the hazard event, the territory affected, the exposure and vulnerability of communities, and the extent to which economic activities are affected. Exposure refers to the presence of people and assets in the area affected by the hazard. Settlement in flood-prone areas, for example, increases exposure. Vulnerability refers to the susceptibility of an individual, community, assets, or institutions to the impacts of hazards. Vulnerability is determined by a wide range of physical, social, economic, governance, and environmental factors. Lack of awareness of disaster risks and unsafe building practices are factors that increase vulnerability.

The terms “disaster” and “emergency” are often used interchangeably, but this assessment refers to “emergency” only in the context of a formal declaration of a state of emergency. Governments may decide to declare a state of emergency in the context of disaster events. During a

state of emergency, the government is legally empowered to undertake actions for the safety and protection of citizens which would not normally be permitted. Disaster risk management concepts are defined in the Glossary.

**Disasters pose extraordinary challenges for PFM systems, because they place urgent demands on governments for relief and recovery while simultaneously disrupting economic activity and the normal operations of governments.** PFM practices that are appropriate during normal operations may be ill-suited for disaster response. Resources may need to be shifted to disaster response without going through the usual approval process. Budget execution and public procurement procedures may need to be expedited in order to ensure timely delivery of disaster relief. Table 1 outlines some of the impacts of disasters on PFM systems, and how resilience can be incorporated into the DRR-PFM response.

**TABLE 1 - PFM Objectives and the DRR-PFM Agenda**

<b>PFM objective</b>	<b>Normal circumstances</b>	<b>DRR-PFM context</b>	<b>DRR-PFM response</b>
<b>Sustainability</b>	Aggregate expenditures and deficits are consistent with a sustainable macro-economic framework and level of debt.	Reduced revenues and unanticipated expenditures may increase deficits.	Risk management provides for risk retention and risk transfer mechanisms to accommodate additional financing needs.
<b>Policy Alignment</b>	Public funds are applied in support of the government’s development policy objectives.	Resources may have to be reallocated from development policies to disaster response and recovery.	Resilient systems anticipate the potential need for disaster response and allow flexibility to reallocate resources.
<b>Efficiency</b>	Outputs are delivered at lowest cost. Value for money considerations encompass costs to society as well as to the public sector.	Supply disruptions may hinder and increase the cost of the delivery of public services and the recovery of assets.	Planning and expedited procedures help mitigate the risk of supply disruptions and sudden price spikes.
<b>Effectiveness</b>	Public funds are applied in a manner that successfully achieves the intended outcome.	Government priorities shift towards disaster response, recovery, and reconstruction.	Budget and procurement systems adapt to new policy priorities and facilitate achievement of disaster response, recovery, and reconstruction goals.
<b>Transparency &amp; Accountability</b>	Public funds are applied transparently for the intended purposes, with reliable systems of internal and external control.	Expedited procedures may lead to a relaxation of controls, increasing the risks of waste and abuse, and may hinder reporting.	Control systems anticipate the need for not only expedited expenditure, but also audits, and retain the ability to track and report on expenditure ex-post.
<b>Equity</b>	Public funds are allocated fairly, in a manner that is inclusive of all social groups and takes account of their needs.	Needs may be unevenly weighted towards some segments of the population on a temporary basis.	Government identifies and targets adversely affected populations and responds to their needs.
<b>Timeliness</b>	Public funds are executed expeditiously following standard operating procedures.	Government must respond to immediate threats to persons and property during disaster response and restore economic activity during recovery.	Government uses expedited operating procedures to meet disaster response and recovery needs.

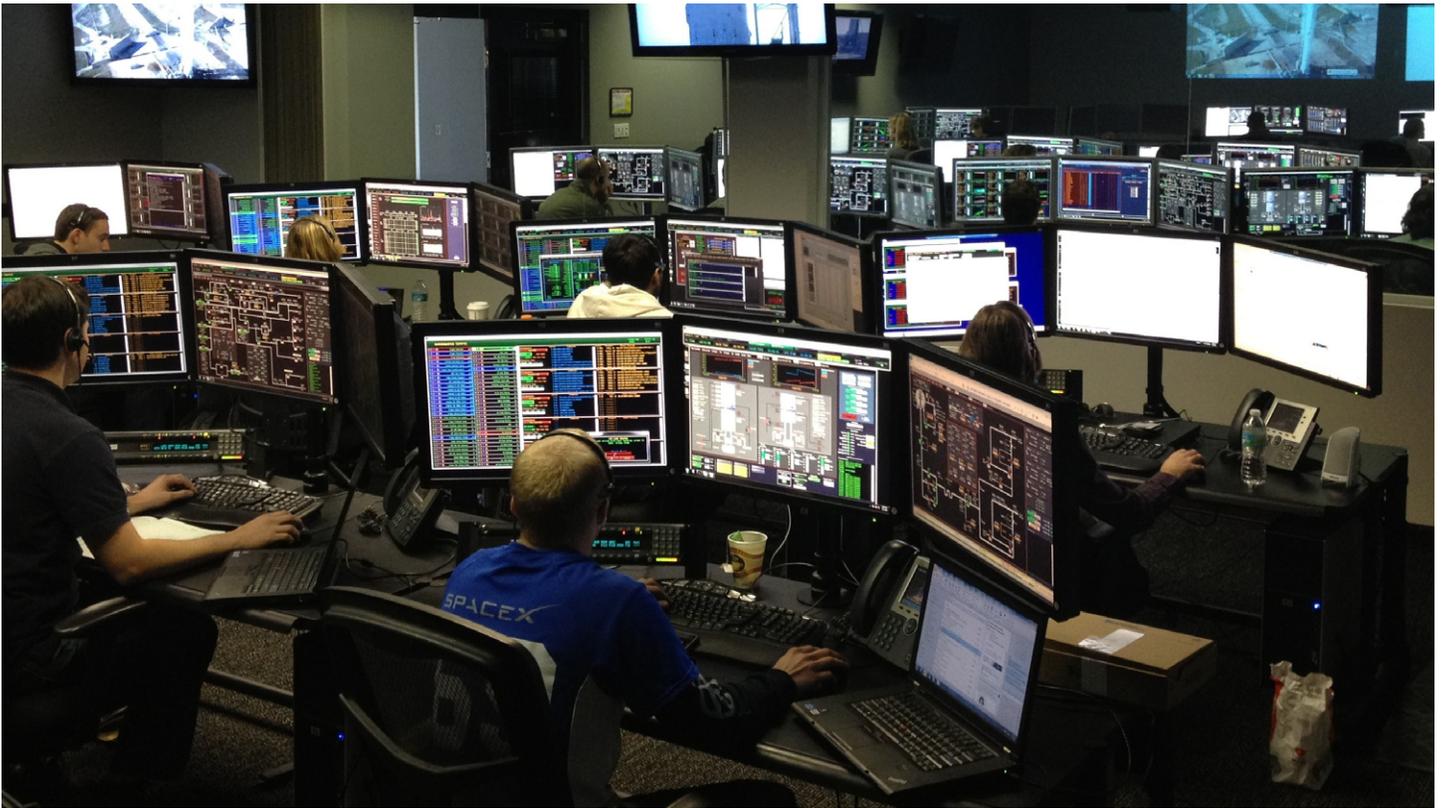


## Pillar 1: DRR-PFM Institutional Arrangements

This pillar focuses on the clarity of institutional roles and responsibilities within government for anticipating and managing disaster response. While natural hazards are unavoidable, appropriate regulatory and institutional arrangements for DRR-PFM can help mitigate their impacts. Streamlined procedures enable the transmission of information and decisions between the central finance and emergency response agencies. This pillar examines the dimensions of disaster preparedness, including how authority is assigned

for declaring a disaster or emergency, the coordination arrangements among key institutions, and the institutional mandate of the CFA for disaster preparedness and response. It also looks at critical aspects of business continuity planning for the CFAs. This includes verification that the CFA and its units have evaluated PFM mission critical functions and systems and have disaster recovery plans and strategies in place.

Elements	Issues
<b>1.1 Disaster Proclamation</b>	<ol style="list-style-type: none"> <li>1. Is there a law or regulation that defines               <ol style="list-style-type: none"> <li>a. which events may be treated as disasters and/or emergencies,</li> <li>b. who has authority to declare a disaster or state of emergency, and</li> <li>c. the criteria for terminating a state of national disaster and/or emergency?</li> </ol> </li> </ol>
<b>1.2 Institutional Mandate for Disaster Risk Management (DRM)</b>	<ol style="list-style-type: none"> <li>1. Is there a centralized entity that has the responsibility and authority to coordinate disaster response at the national and/or subnational levels?</li> <li>2. Are the roles and authorities of the national disaster agency relative to other government bodies clearly defined?</li> </ol>
<b>1.3 CFA Capacity for DRM</b>	<ol style="list-style-type: none"> <li>1. Are mechanisms in place to facilitate coordination and communication between the CFA and disaster/emergency response entities?</li> <li>2. Are public finance officers trained annually on how to execute their specific roles and responsibilities in support of disaster-response activities?</li> <li>3. Are post-disaster reviews conducted to assess the impact of disasters on key PFM functions?</li> </ol>
<b>1.4 CFA Business Continuity Planning</b>	<ol style="list-style-type: none"> <li>1. Does the CFA have a business continuity plan (BCP) that includes a prioritized list of mission-critical PFM functions, informed by the business impact analysis of key units?</li> <li>2. Was the BCP executed during the most recent catastrophe?</li> <li>3. Is there a management process to ensure that critical budgetary units' BCPs are up-to-date, routinely maintained, and readily accessible to all personnel?</li> <li>4. Are there clear standard operating procedures for working from home, including adequate connectivity, suitable software and hardware tools, and the existence of procedures to guarantee the adequate use of sensitive information?</li> </ol>



## Pillar 2: Resilient Information Systems and Records

This pillar examines how PFM institutions prepare information systems and digital records so that they can respond to and continue to operate following disasters. It reviews regulations and management practices for data, IT

assets, and working arrangements for staff with PFM functions, considering potential disruptions to office-based work. It also examines if robust backup routines are in place and if arrangements are adequate for the continuity of data centers.

Elements	Issues
<p><b>2.1 Regulatory Framework</b></p>	<ol style="list-style-type: none"> <li>1. Does the legal and regulatory framework consider the following data management, IT asset, and working arrangements for staff with PFM functions?               <ol style="list-style-type: none"> <li>a. Use of disaster-resilient storage arrangements for data and IT assets (e.g., storing data on the cloud or off-site)</li> <li>b. Staff access to PFM systems in emergency and post-disaster situations (e.g., remote access, office-based access in a crisis)</li> <li>c. Access to email, capacity to run home-based work/videoconferencing (e.g., VPN, security standards, basic access, confirmation, testing)</li> <li>d. Electronic document acceptance and electronic signature (e.g., policy on digital documents and approvals, related systems)</li> </ol> </li> </ol>

Elements	Issues
<p><b>2.2 Planning for IT Resilience</b></p>	<ol style="list-style-type: none"> <li>1. Does the CFA have a prioritized list of IT systems that are most critical to the agency’s business operations and an assessment of the impact of failure for each system?</li> <li>2. Has the CFA set a maximum allowable outage/risk tolerance for disruption for crucial PFM systems (e.g., if electricity were down)?</li> <li>3. Is there a business continuity plan to manage risks pertaining to the critical failure of important IT systems and applications (e.g., third-party service providers uptime and service level commitments)?</li> <li>4. Is there a mechanism that ensures payments can be made in post-disaster situations even when IT systems, connectivity, and power are not available?</li> </ol>
<p><b>2.3 IT Resilience</b></p>	<ol style="list-style-type: none"> <li>1. Does the CFA have an IT disaster recovery (DR) plan addressing risks to hardware, software, and communications that is tested annually?</li> <li>2. Are essential CFA records digitized? (Provide a listing of known records and electronic records status.)</li> <li>3. Are backup routines sufficiently and suitably robust (i.e., level of confidence) with regard to the following? <ol style="list-style-type: none"> <li>a. Backups are stored securely off-site and encrypted</li> <li>b. Backup and DR technologies are sufficiently resilient (e.g., tape, disk, cloud, site-to-site replication)</li> <li>c. Records are maintained of backup frequency (backup logs) and successful redundancy</li> </ol> </li> <li>4. Is the government’s data center resilient and secure with respect to the following? <ol style="list-style-type: none"> <li>a. Smoke, fire, humidity and flood detection, underneath data center raised floors, fire barriers, and robust building architecture ensure that servers are physically secure</li> <li>b. Uninterruptible power supply with battery backup and generators can maintain operation in case of power cuts</li> <li>c. Redundant servers and storage with failover provisions at hardware and software levels support business continuity</li> </ol> </li> </ol>



## Pillar 3: Planning and Budgeting for Disaster Risk Management

This pillar reviews how planning and budgeting processes can support risk reduction, resilience, and the timely, efficient, and responsible use of funds for disaster response and recovery activities. CFAs should proactively assess risks and help ensure that funding mechanisms are available to address the foreseeable impacts of disaster events. Effective planning and budgeting for disaster risks can reduce the exposure of people and assets to disasters and improve resilience. Ensuring that financial provision is made before disasters occur can accelerate the government’s response, allowing agencies to assist victims when they need help the most. Governments may choose to cap the payments to households and businesses in the event of disasters in order to limit implicit contingent liabilities and encourage households and businesses to reduce risks and purchase their own insurance. Forward-looking budget planning can take the form of either pre-authorized flexibility to reallocate national resources to where it is most needed or of access to external financing to supplement domestically financed resources. Policies and procedures should facilitate an efficient but

transparent allocation of resources to the disaster response activities. Governments will need to put in place mechanisms to identify the most vulnerable segments of the population and ensure that their needs are addressed.

This pillar also examines how CFAs can make financial provision for costs likely to be incurred for disaster response and recovery. Planning begins with an estimation of direct costs for the restoration of infrastructure and basic needs of citizens, and the contingent liabilities that are likely to be triggered. It also examines whether an appropriate disaster risk financing strategy has been put in place. Such a strategy would include consideration of which risks to “retain” and which ones to “transfer.” Governments typically retain risks (accept financial responsibility) posed by higher-frequency and lower-severity hazards through mechanisms such as reserve funds. Governments will usually “transfer” risks posed by lower-frequency and higher-severity hazards through the purchase of disaster risk financing instruments such as insurance.

Elements	Issues
<p><b>3.1 Fiscal Risk Assessment</b></p>	<ol style="list-style-type: none"> <li>1. Are the following fiscal risks associated with natural hazards assessed and quantified, including an assessment of average annual losses and probable maximum losses from the relevant hazards?               <ol style="list-style-type: none"> <li>a. Direct costs or explicit contingent liabilities (e.g., emergency response, repair and reconstruction of public physical assets)</li> <li>b. Implicit contingent liabilities (liabilities for which the government has no legal obligation but provides compensation or pay-outs, e.g., payments to businesses and households for disaster relief and recovery, support for state-owned enterprises)</li> <li>c. Fiscal impacts (reductions in revenue collection, increases in prices, worsening public debt-to-GDP)</li> </ol> </li> <li>2. Does the government specify and cap disaster relief, recovery, and reconstruction entitlements for households and businesses?</li> <li>3. Does the government present a fiscal risk statement that integrates and quantifies disaster risks for the short-, medium-, and long-term?</li> <li>4. Is the fiscal risk statement publicly available and updated regularly?</li> </ol>
<p><b>3.2 Expenditure Planning for Disaster Risk Reduction and Resilience</b></p>	<ol style="list-style-type: none"> <li>1. Is disaster risk reduction integrated into budget planning and budget documents using one or more of the following instruments?               <ol style="list-style-type: none"> <li>a. Programs for disaster risk reduction and resilience activities</li> <li>b. Programs for disaster response and recovery, which can be activated as needs arise</li> </ol> </li> </ol>

Elements	Issues
	<ul style="list-style-type: none"> <li>c. Regular reviews of resource allocations for disaster risk reduction, resilience, response, and recovery taking into account updated risk assessments</li> <li>d. Programs for subnational governments for disaster risk reduction and resilience activities</li> </ul> <p>2. Do adaptive social protection programs that support the poor and vulnerable populations or specific disaster recovery programs that target resources for disaster response and recovery to households and businesses meet the following criteria?</p> <ul style="list-style-type: none"> <li>a. Relevant agencies maintain a registry of beneficiaries of such programs</li> <li>b. Registries can be updated quickly to integrate those who are newly vulnerable and in need of disaster response and recovery assistance</li> <li>c. Programs have mechanisms in place to ensure the timely, secure transfer of funds to beneficiaries in the event of disasters</li> </ul>
<p><b>3.3 Financing of Disaster Response and Recovery</b></p>	<p>1. Does the government have a disaster risk financing strategy that layers disaster risk financing (DRF) instruments based on the frequency and severity of risks using the following tools?</p> <p><b>Risk Retention</b></p> <ul style="list-style-type: none"> <li>a. General contingency, reserve and/or stabilization funds (appropriated)</li> <li>b. Dedicated funds for disaster relief, recovery, and reconstruction (appropriated)</li> <li>c. Contingent financing instruments</li> </ul> <p><b>Risk Transfer</b></p> <ul style="list-style-type: none"> <li>d. Indemnity-based insurance</li> <li>e. Parametric insurance (sovereign or sector specific)</li> <li>f. Pooled risk financing instruments</li> <li>g. Catastrophe bonds, or other market-based instruments</li> </ul> <p>2. Does the government consistently fund DRF instruments in line with its strategy, especially those requiring an appropriation, such as disaster funds or dedicated reserve funds?</p> <p>3. Does the strategy provide reasonable coverage of the government's disaster-related fiscal risks, including the contingent liability associated with the government's average annual losses?</p>



## Pillar 4: Disaster-Informed Public Investment and Asset Management

This pillar examines the extent to which disaster risks and disaster response are integrated into the investment project identification, appraisal, and selection processes. It reviews the policies and processes at the portfolio and project levels. It also assesses arrangements to fast-track urgent public investments for disaster response, recovery, and reconstruction. Project design, physical placement, and construction should consider vulnerability to natural hazards using projections of the frequency and intensity of extreme weather events over the asset's intended lifetime. Project appraisal practices should verify that vulnerability to natural hazards and changing environmental conditions has been adequately considered and addressed. Appraisal and design standards should ensure that critical infrastructure is built and maintained to withstand low frequency, high intensity disaster events.

This pillar also assesses the extent to which physical asset management policies consider disaster risks. This includes: the arrangements in place to monitor physical assets based on asset type, location, value, vulnerability to disaster events; the functionality of asset registry and other digital geo-referenced platforms as a tool for disaster risk management; and the use of risk transfer mechanisms, such as insurance, to manage disaster-related risks to physical assets. Disaster risk management requires the identification of critical infrastructure assets that will ensure network resilience following disasters. Disaster risk management practices also require the identification of assets to be insured against damage and loss, allowing governments to consolidate and optimize insurance coverage.

Elements	Issues
<b>4.1 Disaster-Informed Public Investment Management</b>	<ol style="list-style-type: none"> <li>1. Do building codes set appropriate risk tolerance standards and regulations for public and private infrastructure based on expected environmental conditions and hazards and taking into account climate change, and are they enforced?</li> <li>2. Does the government identify and set design standards for critical infrastructure?</li> <li>3. Do land use plans identify natural hazards and apply zoning restrictions for infrastructure?</li> <li>4. Do public investment procedures require hazard risk assessment during project screening at an early stage of preparation?</li> <li>5. Do public investment procedures require hazard risk assessment and the identification of risk mitigation measures during project appraisal and before approval?</li> <li>6. Are disaster risks identified, quantified, and clearly assigned between parties in the context of public-private partnerships and infrastructure service contracts?</li> <li>7. Do public investment procedures facilitate the fast-tracking of appraisal, selection, and approval of disaster response, recovery, and reconstruction projects?</li> <li>8. Are expedited projects subject to ex-post evaluations?</li> </ol>
<b>4.2 Disaster-Informed Asset Management</b>	<ol style="list-style-type: none"> <li>1. Does the government have an asset management policy that integrates the following disaster risk management considerations? <ol style="list-style-type: none"> <li>a. Assesses vulnerability to hazards</li> <li>b. Sets resilience standards for physical assets</li> <li>c. Establishes criteria for the identification of critical infrastructure</li> <li>d. Sets resilience standards for critical infrastructure</li> <li>e. Assesses the value of important physical assets</li> <li>f. Sets guidelines for the maintenance of physical assets</li> <li>g. Establishes guidelines on damage and loss insurance for physical assets</li> </ol> </li> <li>2. Does the government maintain an up-to-date registry of its physical assets that addresses the following disaster risk management considerations? <ol style="list-style-type: none"> <li>a. Identification of physical asset (description, geo-location, ownership)</li> <li>b. Classification of physical assets to distinguish critical infrastructure</li> <li>c. Assessment of risk exposure for each physical asset</li> <li>d. Assessment of annual and periodic maintenance costs</li> <li>e. Assessment of replacement cost</li> <li>f. Insurance valuation and premium cost</li> </ol> </li> <li>3. Does the government have a digital asset management information system?</li> <li>4. Is there a single institution responsible for managing the asset registry or with access to registries that are managed by other entities?</li> <li>5. Is the asset registry used in practice to inform budget planning as it pertains to disaster risk management?</li> <li>6. Is there is a specific entity that coordinates procurement of insurance for public assets?</li> </ol>



## Pillar 5: Budget Management, Control, and Reporting during Disasters

**This pillar assesses the controls in place to ensure that resources for post-disaster response and recovery are used as intended in a transparent manner.** When disasters strike, governments have to act expeditiously to provide relief for affected populations and restore services. Urgency is not incompatible with effective control and accountability. Transparency is particularly important in the context of disaster response and recovery. Governments should be able to demonstrate that funds are allocated fairly and support those most in need. Expedited spending should take place within control mechanisms that can be adapted and streamlined to ensure timeliness without compromising safeguards. A single individual or small group of individuals should not be able to initiate, approve, undertake, and review the same action. Separation of functions is one of the most important features of an internal control plan, to reduce the risk of fraud or

misappropriation, and should be followed in times of disasters as well.

**This pillar also examines the extent to which financial transactions for post-disaster response and recovery can be tracked and verified ex-post.** It assesses the availability of reliable, relevant, and timely information about citizens' entitlements, funding allocations, procurement, implementation progress, and contract management. In general, governments should consider how best to distinguish disaster-related items or sub-accounts in their chart of accounts. This could include disaster-related expenditure tagging and tracking options for existing codes and programs that are used in an emergency. This has taken on increasing importance as countries have struggled to respond to the COVID-19 pandemic.

Elements	Issues
<p><b>5.1 Post-Disaster Treasury Management</b></p>	<ol style="list-style-type: none"> <li>1. Does the Treasury have up-to-date information on ALL flows and the application of externally-sourced funds (insurance payouts, loans, development partners grants and financial assistance/donations) for disaster response and recovery through one or more of the following?               <ol style="list-style-type: none"> <li>a. Funds are managed and payments to suppliers executed by the Treasury</li> <li>b. Funds are channeled through the treasury account to executing budgetary units</li> <li>c. Funds are channeled directly to executing budgetary units with simultaneous notification to the Treasury</li> <li>d. Funds are channeled directly to executing budgetary units with regular reporting to the Treasury</li> </ol> </li> </ol>
<p><b>5.2 Post-Disaster Budget Flexibility</b></p>	<ol style="list-style-type: none"> <li>1. Do laws and regulations lay out the following procedures to facilitate adjustments in budgets in response to disasters?               <ol style="list-style-type: none"> <li>a. Inclusion in the budget of programs and/or activities for disaster response and recovery, which can be activated as needs arise</li> <li>b. Authority for the CFA to reallocate funds without approval of the legislature</li> <li>c. Authority for spending agencies to reallocate funds with/without authorization of the CFA</li> <li>d. Access to contingency, reserve, stabilization, and disaster funds for disaster response</li> <li>e. Escape clauses for fiscal rules in the event of disasters</li> <li>f. Provisions in loans and external financing agreements that enable deferment of servicing, accelerated drawdown and/or adjustments, in the application of funds following a disaster</li> </ol> </li> </ol>

Elements	Issues
<b>5.3 Post-Disaster Expenditure Control</b>	<ol style="list-style-type: none"> <li>1. Do laws and regulations authorize changes to the following ex-ante expenditure controls (timing, authorizing officer, and delegations of authority) following disasters? <ol style="list-style-type: none"> <li>a. Eligibility of disaster-related expenditures</li> <li>b. Availability of appropriate budget allocation</li> <li>c. Legality of the expenditure</li> <li>d. Verification of goods and services provided</li> <li>e. Provision of supporting documents for expenses incurred</li> </ol> </li> <li>2. Do laws and regulations authorize changes to the following commitment controls to expedite expenditures for disasters? <ol style="list-style-type: none"> <li>a. Unplanned expenses</li> <li>b. Expenditures without appropriation</li> <li>c. Expedited approval</li> <li>d. Flexible procurement arrangements</li> </ol> </li> <li>3. Do regulations authorize changes in the control framework for extra-budgetary units after disasters?</li> </ol>
<b>5.4 Accounting for and Tracking Disaster-Related Expenditure</b>	<ol style="list-style-type: none"> <li>1. Does the Chart of Accounts or other reporting classification identify the following categories of disaster-related expenditure, and are they used consistently across budgetary units? <ol style="list-style-type: none"> <li>a. Specific programs, segregated line items or sub-accounts for disaster-related expenditures</li> <li>b. Expenditures by disaster phase (response, recovery, reconstruction)</li> <li>c. Expenditures by type of hazard and/or event</li> <li>d. Expenditures by beneficiary group</li> <li>e. Externally financed public expenditures</li> </ol> </li> <li>2. Do accounting regulations and instructions ensure traceability of disaster response related accounting records for budgetary and extra-budgetary units including the following? <ol style="list-style-type: none"> <li>a. Timely and uniform reporting of disaster-related spending by all public agencies</li> <li>b. Requirements to retain supporting documents for a reasonable period</li> </ol> </li> <li>3. Does the CFA record disaster-related expenditure information in a way that can be easily compiled, monitored, and reported on through the country's information systems?</li> </ol>
<b>5.5 Post-Disaster Internal Audit</b>	<ol style="list-style-type: none"> <li>1. Does the internal audit entity conduct pre-emptive audits of the existence of adequate mechanisms for disaster response (before a disaster occurs)?</li> <li>2. Does the internal audit entity conduct specific audits of post-disaster response and recovery activities and expenditures that include the following? <ol style="list-style-type: none"> <li>a. Specific guidelines for conducting internal audits of disaster response and recovery activities and expenditures</li> <li>b. Adequate scope of audits of disaster response and recovery activities and expenditures</li> <li>c. Requirements for internal audits for disaster response and recovery activities and expenditures to be undertaken during the implementation of these activities</li> </ol> </li> </ol>

Elements	Issues
	<ol style="list-style-type: none"> <li>3. Have specific audits identified issues with the adequacy and effectiveness of internal controls during or after disaster response and recovery?</li> <li>4. Has management responded to audit recommendations on disaster operations?</li> </ol>
<p><b>5.6 Transparency of Disaster-Related Expenditure</b></p>	<ol style="list-style-type: none"> <li>1. Does the government prepare and publish the following disaster-related information in a timely and transparent manner? <ol style="list-style-type: none"> <li>a. Entitlements for persons, households, and businesses for disaster relief, response, and recovery and how these entitlements can be accessed</li> <li>b. Programs for persons, households, and businesses for disaster relief, response, and recovery and how these programs can be accessed</li> <li>c. Budget allocations for disaster-related expenditures</li> <li>d. Information on disaster-related programs and their intended activities</li> <li>e. Periodic budget execution reports for disaster-related expenditures and annual reports on specific funds dedicated to disaster response</li> <li>f. Public procurement contracting information for disaster response and recovery activities, including both ex-ante (list of pre-qualified/pre-selected contractors) and ex-post (contract awards, basis of awards) data</li> <li>g. Disaster response implementation reports summarizing financed activities and associated results</li> </ol> </li> <li>2. Is disaster-related expenditure and program information made available in open data formats and with adequate privacy safeguards?</li> </ol>



## Pillar 6: Disaster-Responsive Public Procurement

This pillar examines the extent to which agencies responsible for procurement have planned for disasters and disaster-related procurement needs. This entails market research and the preparation of procurement plans, sourcing strategies, framework agreements, memoranda of understanding, and other strategic initiatives to optimize purchases for disaster response and recovery.

This pillar also assesses the extent to which procuring entities with disaster response and recovery responsibilities have and use expedited procurement procedures. Expedited procedures should ensure accountability, transparency, and overall value for money, considering quality, cost, and time of delivery. While legislation may define circumstances in which urgent procurement can

be undertaken, this is normally supplemented by detailed instruments and instructions, providing guidance on how to apply the legislation in specific post-disaster circumstances. These include standard operating procedures, handbooks, user guides, or other manuals, together with model documents and templates that guide the formulation of procurement documents for the purchase of goods, works, and services in post-disaster situations. These documents should specify implementation conditions, including the conditions under which, within a certain limit and/or defined criteria, contractors may perform agreed activities before submitting prices. Expedited procedures should be developed during normal operating conditions, with associated training taking place at this time so that they can be executed effectively in disaster response.

Elements	Issues
<p><b>6.1 Procurement Planning for Post-disaster Response</b></p>	<ol style="list-style-type: none"> <li>1. Does the centralized procurement agency have authority to coordinate line agency disaster response procurement plans and activities?</li> <li>2. Are government agencies required to prepare annual or multi-annual procurement plans?</li> <li>3. Are procurement plans used as inputs to the annual budget?</li> <li>4. Do procurement plans use any of the following tools to prepare for potential disruptions in supply chains or changing procurement needs in the event of disasters?               <ol style="list-style-type: none"> <li>a. Spend analyses to extrapolate future requirements from historical disaster response purchases</li> <li>b. Ex-ante market research and cost analyses to assess supplier markets</li> <li>c. End-to-end supply chain visualizations (geographic maps and network graphs) to plan the response to supply chain disruptions</li> <li>d. Pre-identification of suitable and potential suppliers and alternate suppliers</li> <li>e. Framework agreements with potential suppliers</li> <li>f. Memoranda of understanding for emergency purchases</li> <li>g. Contract provisions to increase contract flexibility following disasters (such as clauses that enable adjustments in volumes)</li> </ol> </li> </ol>
<p><b>6.2 Expedited Procurement Procedures</b></p>	<ol style="list-style-type: none"> <li>1. Do legislation and/or regulations define expedited procurement procedures for disaster response and recovery, the circumstances under which expedited procedures may be applied, and the agencies authorized to apply them, including the following?               <ol style="list-style-type: none"> <li>a. Documented standard operating procedures, protocols, and/or instruction manuals that outline how entities should execute procurement and contracting for disaster response and recovery</li> <li>b. Thresholds for the use of competitive procedures for procurement for disaster response and recovery operations</li> </ol> </li> </ol>

Elements	Issues
	<ul style="list-style-type: none"> <li>c. Adjustments to routine competitive procurement procedures to expedite response</li> <li>d. Mechanisms to facilitate timely determination of vendor eligibility and their registration status</li> <li>e. Special requirements for overseas-based vendors and contractors</li> </ul> <ol style="list-style-type: none"> <li>2. Has the government published model procurement documents (templates) for goods, services, and civil works that are most frequently purchased for disaster response and recovery and made these documents accessible to all procuring entities?</li> <li>3. Is institutional responsibility for the preparation and updating of model documents clearly assigned?</li> <li>4. Is a justification required for exceptions to the expedited procurement procedures for disaster response and recovery?</li> <li>5. Are expedited procedures effective in accelerating the procurement of goods, services, and works for disaster response and recovery in terms of the following? <ul style="list-style-type: none"> <li>a. Accelerated contractor registration</li> <li>b. Accelerated award contracts after issuing tenders</li> </ul> </li> </ol>
<p><b>6.3 Contract Management</b></p>	<ol style="list-style-type: none"> <li>1. Do contracts for disaster response and recovery operations adequately address the following contract management requirements? <ul style="list-style-type: none"> <li>a. Specify implementation conditions</li> <li>b. Define and assign management functions and responsibilities</li> <li>c. Establish protocols to ensure adequate and timely access to information on each phase of procurement</li> <li>d. Define post-award contract oversight functions and procedures</li> </ul> </li> <li>2. Are contract management practices performed consistently and adequately in the following areas? <ul style="list-style-type: none"> <li>a. Monitoring of contract performance, especially with respect to the timely delivery and receipt of goods, works, and services to disaster-affected areas</li> <li>b. Inspection, quality control, supervision of civil works, and final acceptance of products</li> <li>c. Examination of invoices and timely processing of payments</li> </ul> </li> <li>3. Is aggregate information on procurement/contract management transactions, reported and monitored?</li> </ol>



## Pillar 7: Disaster-Responsive Audit and Oversight

This pillar assesses how disaster-related expenditures are internally and independently reviewed to ensure compliance with legislation and regulations and to disincentivize fraud, waste, and abuse. It includes a review of instruments that the supreme audit institution and the legislature can deploy to oversee the use of funds during the

disaster response, recovery, and reconstruction phases, as well as the sanctions or remedies that can be applied. The pillar seeks to verify that the control framework and provisions for public engagement are maintained despite the challenges to normal operations.

Elements	Issues
<b>7.1 External Audit</b>	<ol style="list-style-type: none"> <li>1. Does the external audit authority have procedures and systems in place to assure that audit functions can be carried out post-disaster?</li> <li>2. Does the external audit authority conduct specific audits of disaster response, recovery, and reconstruction expenditures that include the following?               <ol style="list-style-type: none"> <li>a. Specific guidelines for conducting such audits</li> <li>b. Adequate scope for the audits</li> <li>c. Requirements that the audits be undertaken shortly after the completion of these activities</li> </ol> </li> <li>3. Have audits identified issues with the adequacy and effectiveness of internal controls during or after disaster response, recovery, and reconstruction?</li> <li>4. Has the executive or the audited entity taken action, based on the external audit recommendations on post-disaster expenditures?</li> </ol>
<b>7.2 Legislative Oversight</b>	<ol style="list-style-type: none"> <li>1. Does the legislature authorize and amend the allocation of resources to disaster response, recovery, and/or reconstruction activities?</li> <li>2. Does the legislature conduct specific reviews of disaster response, recovery, and reconstruction activities and expenditures?</li> <li>3. Have recommendations been issued and followed up on?</li> <li>4. Are the legislature’s hearings or meetings on disaster response, recovery, and reconstruction activities and expenditures open to the public and/or are reports publicly available?</li> </ol>
<b>7.3 Participation</b>	<ol style="list-style-type: none"> <li>1. Does the government hold public consultations on the allocation and application of disaster response, recovery, and reconstruction activities, and related budget measures?</li> <li>2. Does the government provide the public with feedback on how citizens’ inputs have been used in the disaster response, recovery, and reconstruction activities?</li> </ol>



## Pillar 8: Social Inclusion

**This pillar assesses the extent to which governments identify the needs of different segments of the population and make provision to address their needs in plans, budgets, and program implementation in response to disasters.** Understanding the differential needs of the different segments of society—men and women, youth and elderly, people with disabilities, ethnic minorities, and others—is key to providing equitable public services. Often the poor and vulnerable groups are the first and most severely affected by disasters; they live in areas that are exposed to hazards, have precarious livelihoods, and have limited resources to fall back upon. Gender considerations apply to both sexes: as disasters and disaster response programs will have differential impacts on men and women. While the provision of services can become more challenging in times of disasters, there is a heightened need for social inclusion to be integrated

into the provision of public services during and after disasters to mitigate the disproportionate impacts on the vulnerable segments of the population.

**Social inclusion considerations can be integrated throughout the budget cycle in planning for disaster risk reduction, response, and recovery.** Integration of social inclusion considerations in DRM entails ministries of finance working in close coordination with line ministries, disaster agencies, gender and/or equality offices, civil society organizations, statistics offices, supreme audit institutions, legislatures, and others. Collection and analysis of disaggregated data plays a key role in understanding social inclusion gaps and in informing disaster-related policy formulation and design; evidence of its use should ideally be seen in budget documentation and budget measures.

Elements	Issues
<b>8.1 Policy Framework and Planning for Social Inclusion</b>	<ol style="list-style-type: none"> <li>1. Is disaggregated socio-economic data (e.g., by gender, age, ethnicity) made available to and collected by the central finance and planning agencies and agencies responsible for disaster risk management and disaster response, recovery, and reconstruction?</li> <li>2. Is there a (sub)national policy/plan for promoting social inclusion/gender equality in the context of disasters and disaster response, recovery, and reconstruction programs that includes the following elements? <ol style="list-style-type: none"> <li>a. An overview of key social inclusion gaps</li> <li>b. Situational analysis of the potential impacts of disasters and/or climate change on women and men, youth and elderly, people with disabilities, ethnic minorities, and others</li> </ol> </li> <li>3. Do disaster response and recovery plans address social inclusion considerations (e.g., location and design of shelters, extraction points for vulnerable groups, design of health and social protection programs)?</li> </ol>
<b>8.2 Institutional Coordination for Social Inclusion in Disaster Risk Management</b>	<ol style="list-style-type: none"> <li>1. Is there an entity responsible for promoting social inclusion/gender equality in disaster risk management and disaster response, recovery, and reconstruction activities including the following? <ol style="list-style-type: none"> <li>a. Identification of potential social inclusion gaps in disaster risk management</li> <li>b. Preparation of measures to address the identified gaps</li> <li>c. Monitoring the implementation of disaster risk management to identify and report on social inclusion gaps</li> </ol> </li> <li>2. Are there established coordination arrangements in place to promote and address social inclusion/gender equality issues including the following? <ol style="list-style-type: none"> <li>a. Central finance agency</li> <li>b. Central planning agency</li> <li>c. National disaster management entity</li> <li>d. Relevant line ministries responsible for social inclusion and the delivery of disaster recovery and response activities</li> <li>e. External stakeholders such as women's organizations, disadvantaged groups, civil society organizations, and non-governmental organizations?</li> </ol> </li> </ol>
<b>8.3 Social Inclusion-Informed Budget System for Disaster Risk Management</b>	<ol style="list-style-type: none"> <li>1. Is the budget process used to guide and implement social inclusion policies for disaster risk management and disaster response, recovery, and reconstruction programs, including the following? <ol style="list-style-type: none"> <li>a. A statement of social inclusion priorities</li> <li>b. Analysis of the impacts of these policies on social inclusion</li> <li>c. A requirement for budget units to include information on the social inclusion impacts of new budget proposals in their budget submissions</li> </ol> </li> <li>2. Is the procurement of goods and services in preparation for and during disaster response and recovery from disasters informed by the social inclusion assessment (e.g., procurement of sanitary menstrual hygiene kits, and pre-natal, pregnancy, and lactating care products for shelters)?</li> <li>3. Is there an independent review of the social inclusion impacts of disaster response, recovery, and reconstruction activities?</li> <li>4. Does the legislature's review of disaster risk management and disaster response, recovery, and reconstruction activities assess social inclusion impacts?</li> </ol>



# Applying the DRR-PFM Assessment

## Assessment Method

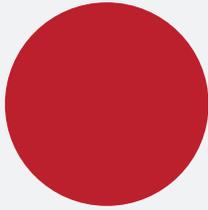
The DRR-PFM Assessment reviews the extent to which disaster resilience and response considerations are integrated into key PFM functions. The review allows an assessor to quickly collect data that describes how a CFA, in cooperation with other relevant stakeholders, operates in disaster situations, highlighting potential weaknesses and strengths.

The questions that are mapped to each of the elements of key pillars are first assessed on a three-point scale based on the existence of the function or process with the following scores: Yes = 1, Partial = 0.5, and No = 0.

The summary score for the element is calculated by adding together the scores for each question and expressing the final score as a percentage of the potential score if all questions were scored as 1. The summary score can be used to provide an overall assessment of the degree of integration of disaster resilience and responsiveness considerations across the PFM systems and within each PFM pillar. The extent to which disaster resilience and responsiveness considerations are integrated into PFM functions are assessed in four quartiles: Low, Basic, Moderate, and Advanced, as shown in Figure 3. Detailed instructions and a complementary spreadsheet are available separately to facilitate scoring.



**FIGURE 3 - DRR-PFM Assessment Scale**



**Low Integration**

An aggregate score of less than 25 percent means a less than basic degree of integration of disaster resilience and responsiveness (DRR) across the PFM systems and institutions. It denotes that few PFM functions support DRR and those that do are likely to be incidental rather than part of a coherent strategy. This may indicate a low level of awareness of disaster risk as a functional imperative of the overall PFM system. Significant improvements are needed to facilitate effective DRR.



**Basic Integration**

An aggregate score of between 25 and 50 percent indicates that DRR considerations are integrated with some key PFM functions. Some PFM processes are carried out with the intent to facilitate DRR, but this approach is not yet systematic. This category signals that disaster risk awareness is still limited. The PFM system would benefit from further strengthening to facilitate DRR.



**Moderate Integration**

An aggregate score of between 50 and 75 percent denotes that DRR considerations are integrated with the majority of key PFM functions. Many PFM processes are performed with the intent to expedite DRR, and these functions are documented, reasonably well coordinated, and streamlined. This category signals awareness of disaster risk as a functional imperative. The PFM system is capable of effective DRR.



**Advanced Integration**

An aggregate score of over 75 percent denotes that DRR considerations are integrated with most or all key PFM functions. Most PFM processes support DRR. The PFM system is used strategically to optimize the financial management of DRR. Most processes are documented, coordinated, streamlined, and automated where possible. This category signals that the capability of the PFM system to prepare for, respond to, and recover from disasters is accepted as a core functional requirement and efforts have been in practice long enough to demonstrate their impact on DRR performance.

## Review Process

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The DRR-PFM Assessment can be administered in the following three stages, either in person or remotely:

### Stage 1: Desk Review

**This entails an in-depth review of legislative, policy, and operational documents, assessments, and reports.** This would include budget laws, financial regulations, parliamentary rules of procedure/conventions, and various PFM or disaster risk assessments to ascertain the enabling environment for managing disaster response from a PFM perspective. A team of assessors reviews the “As-Is” state of preparedness against the list of key interview questions and criteria outlined in this document. Once these practices are documented, they are confirmed in Stage 2. It typically takes a week to complete this stage.

### Stage 2: Country Visit

**The review team meets with country officials to map the PFM processes and practices that facilitate response to disasters.** Through discussions with government authorities, areas of strength and vulnerability are identified. The output of Stage 2 is a draft report of the results with recommendations on ways to strengthen vulnerable PFM areas. The country visit can be conducted virtually.

### Stage 3: Validation and Action Plan Development

**In the final stage of the review, a validation exercise is conducted with key stakeholders to ensure that the findings of the DRR-PFM Assessment are valid and credible.** This involves a two-step validation process. First, a validation exercise of the draft report will be conducted with stakeholders, including government officials, civil society organizations, etc. to ensure that findings of the DRR-PFM Assessment are valid and credible. Second, the team develops recommendations and works together with the government to formulate a prioritized reform strategy to address the key challenges identified in the prior two stages. All assessment reports undergo an internal quality enhancement review by the World Bank to encourage consistency of application across countries. Stages 2 and 3 could take place simultaneously and would require about one week to be completed.

## Stakeholders in the Review Process

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**The main stakeholder in the review process is the CFA, which is the authority responsible for the fiscal response.**

Other stakeholders may also be involved. These stakeholders are not necessarily resident within the CFA, but they have a bearing on the CFA's capacity to respond. A suggested list of stakeholders includes:

- Line ministries
- Ministry/department for public investment/works
- National disaster agency
- National statistical office
- Public procurement unit
- IT department/team
- Gender equity office
- Supreme Audit Institution
- Legislature and its bodies
- Civil society

## Documents for Review

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**Assessment teams should review relevant documents to conduct the assessment.** The recommended list of documents for review below is not meant to be exhaustive but rather aims to guide the teams on which key sources should be consulted. The assessment teams may also find it helpful to review any internal or external assessments of performance, such as the latest Public Expenditure and Financial Accountability (PEFA) reports, Public Investment Management Assessment reports, IMF Climate Change Policy Assessment, and others.

### Suggested documents to review:

- Annual budget law/documentation/estimates approved by the legislature
- Annual financial report
- Appraisal report for major investment projects
- Asset management law, rules, procedures, and/or policies
- Budget circular
- Budget units' cash forecasts
- Business continuity plans of the government, including the CFA
- Chart of accounts
- Commitment ceilings issued by the CFA
- Date of hearings on audit findings
- Disaster risk financing policy
- Disaster risk management and/or climate change adaptation plan/strategy
- Documentation on the digital asset management platform
- Emergency preparedness and response plans of the government, including the CFA

- External audit reports
  - Internal audit act, rules and/or procedures
  - In-year budget reports
  - IT disaster recovery plan/strategy
  - Legislation and regulations governing the Supreme Audit Institution
  - List of fiscal information published
  - List of major capital investment projects
  - Ministry budget statements or performance plans
  - Monitoring reports of major investment projects
  - National and/or sector policy for social inclusion and/or gender equality
  - National development and sector policies/strategies
  - National guidelines for appraisal of investment projects
  - Organizational chart of the CFA and other relevant line ministries
- Parliamentary procedures for the review of budget and audit reports
  - PFM act, rules and/or procedures
  - Procurement plans
  - Procurement reports
  - Procurement website information
  - Project selection evaluation criteria
  - Public investment management act, rules and/or procedures
  - Public procurement act, rules and/or procedures
  - Public procurement database
  - Recommendations issued by legislature on external audits
  - Register of fixed assets, land, and subsoil assets (including age and usage)
  - Rules on internal controls for non-salary expenditure



# Glossary

The glossary draws extensively on the following United Nations and World Bank publications:

United Nations Office for Disaster Risk Reduction, <https://www.undrr.org/terminology>

World Bank. 2012. The Sendai Report: Managing Disaster Risks for a Resilient Future. World Bank, Washington, DC. <https://openknowledge.worldbank.org/handle/10986/23745>

**Adaptation.** In human systems, the process of adjustment to actual or expected climate change and its effects in order to moderate harm or exploit beneficial opportunities. In natural systems, the process of adjustment to climate change and its effects. Human intervention may facilitate adjustment of natural systems to expected climate change.

**Average annual loss.** The expected loss per year associated with the occurrence of future hazards assuming a long observation time frame. It considers the damage caused to the exposed elements by small, moderate, and extreme events. It is a useful and robust metric for risk ranking and comparisons.

**Business Continuity Planning.** Process for creating a system of prevention and recovery from potential threats, usually through a plan that ensures that personnel and assets are protected and are able to function quickly in the event of a disaster.

**Capacity.** The combination of the strengths, attributes, and resources available to an individual, community, society, or organization, which can be used to achieve established goals. Climate change. A change in climate conditions that persists for an extended period. Climate change may be due to

natural internal processes or external forces, or to persistent anthropogenic changes in the composition of the atmosphere.

**Climate extreme event.** The occurrence of a climate variable above (or below) a threshold value near the upper (or lower) ends of the range of observed values of the variable.

**Contingent liabilities.** Obligations that may occur or may not come due, depending on whether particular events occur. The probability of their occurrence may be exogenous to government policies (for example, if they are related to disasters) or endogenous (for example, as a consequence of government policy).

- **Explicit contingent liabilities.** Represent specific obligations, created by law or contract, that governments must settle.
- **Implicit contingent liabilities:** Represent moral obligations or burdens that, although not legally binding, are likely to be borne by governments because of public expectations or political pressures.

**Damage.** Total or partial destruction of physical assets existing in an affected area. Damage occurs during and after the disaster and is measured in physical units (i.e., square meters of housing, kilometers of roads, etc.). Its monetary value is expressed in terms of replacement costs according to prices prevailing just before the event.

**Damage and loss insurance.** Insurance which pays out when a specified event causes damage or loss to an insured asset. The amount of the payout is capped at the assessed value of the asset. Damage and loss insurance may exclude specified hazards.

**Disaster.** Severe alterations in the normal functioning of a community or a society due to hazardous physical events interacting with vulnerable social conditions, leading to widespread adverse human, material, economic, or environmental effects that require an immediate emergency response to satisfy critical human needs and that may require external support for recovery.

**Disaster risk.** The likelihood over a specified time period of severe alterations in the normal functioning of a community or a society due to hazardous physical events interacting with vulnerable social conditions. This may lead to widespread adverse human, material, economic, or environmental effects that require an immediate emergency response to satisfy critical human needs and that may require external support for recovery.

**Disaster risk reduction.** Measures taken in advance of a disaster aimed at decreasing or eliminating its impact on society and the environment.

**Disaster risk financing.** The practice of managing fiscal impacts and economic losses caused by natural hazards (e.g., cyclones, droughts, earthquakes, floods) and increasing financial resilience to disaster and climate risk.

**Disaster risk financing strategy.** Strategies to protect governments, businesses, and households from the economic burden of disasters. DRF strategies can include programs to increase the financial capacity of a state to respond to a disaster impact or an emergency while protecting the fiscal balance. They can also promote the deepening of insurance markets at a sovereign and household level and social protection strategies for the poorest.

**Disaster risk governance.** The system of institutions, mechanisms, policy and legal frameworks, and other arrangements to guide, coordinate, and oversee disaster risk reduction and related areas of policy.

**Disaster risk management.** Processes for designing, implementing, and evaluating strategies, policies, and measures to improve the understanding of disaster risk, foster risk reduction, and transfer, and promote continuous improvement in disaster preparedness, response, and recovery practices, with the explicit purpose of increasing human security, wellbeing, quality of life, and sustainable development.

**Early warning system.** The set of capacities needed to generate and disseminate timely and meaningful warning information to enable individuals, communities, and organizations threatened by a hazard to prepare and to act appropriately. The system also gives sufficient time to reduce the possibility of harm or loss.

**Economic loss.** Total economic impact that consists of direct and indirect economic loss.

- **Direct economic loss.** The monetary value of disaster damages.
- **Indirect economic loss.** Monetary value of the consequence of direct economic loss and/or human and environmental impacts. Indirect economic loss includes microeconomic impacts (for example, a decline in revenue from business interruption); mesoeconomic impacts (for example, a decline in revenue from supply chain impact or temporary unemployment); and macroeconomic impacts (for example, price increases or increases in government debt). Indirect economic losses can occur inside or outside the hazard area and often with a time lag.

**Emergency.** A serious disruption of the functioning of a community or a society at any scale due to unforeseen events that pose an immediate threat to life, health, property, the environment, and/or society. Emergencies may arise because of natural hazards, social or political events. The occurrence of an emergency is formally declared as a state of emergency. During a state of emergency, the government is legally empowered to undertake actions that would not normally be permitted.

**Exposure.** People, property, systems, or other elements present in hazard zones that are thereby subject to potential losses.

**Extreme (weather) event.** The occurrence of a weather variable above (or below) a threshold value near the upper (or lower) ends of the range of observed values of the variable. Extreme weather events are of relatively short duration and include storms, storm surges, tornados, intense rainfall events, droughts, heat waves, and flooding.

**Hazard.** The potential occurrence of a natural or human-induced physical event that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, and environmental resources.

**Mitigation (of disaster risk and disaster).** The lessening of the potential adverse impacts of physical hazards (including those that are human-induced) through actions that reduce the hazard, exposure, and vulnerability.

**Natural hazard.** The potential occurrence of a natural physical event that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, and environmental resources.

**Parametric insurance.** Insurance which pays out on the occurrence of an event (such as a storm or earthquake of specified intensity), not the magnitude of the resulting loss. The trigger mechanisms establish whether such an event has occurred and if payment under a parametric insurance contract is required. Triggers may be:

- **Purely parametric.** The trigger is based solely on evidence of the event having occurred (such as recordings such as wind speed or rainfall amount).
- **Parametric index or model.** The trigger is based on a formula, index, or model as a proxy for the actual event.

**Preparedness.** The knowledge and capacities developed by governments, professional response and recovery organizations, communities, and individuals to effectively anticipate, respond to, and recover from, the impacts of likely, imminent, or current hazard events or conditions.

**Probable maximum loss.** A risk metric that represents the maximum loss that could be expected, on average, within a given number of years. It is widely used to establish limits related to the size of reserves that, for example, insurance companies or a government should have available to buffer losses: the higher the return period, the higher the expected loss. It always has an associated mean return period.

**Reconstruction.** The medium- and long-term rebuilding and sustainable restoration of resilient critical infrastructures, services, housing, facilities, and livelihoods required for the full functioning of a community or a society affected by a disaster, aligning with the principles of sustainable development and “build back better”, to avoid or reduce future disaster risk.

**Recovery.** The restoring or improving of livelihoods and health, as well as economic, physical, social, cultural, and environmental assets, systems, and activities of a disaster-affected community or society, aligning with the principles of sustainable development and “build back better”, to avoid or reduce future disaster risk.

**Resilience.** The ability of a system, community, or society exposed to hazards to resist, avoid, absorb, accommodate, adapt to, transform, and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions through risk management.

**Response.** Actions taken directly before, during or immediately after a disaster in order to save lives, reduce health impacts, ensure public safety, and meet the basic subsistence needs of the people affected.

**Risk assessment.** A methodology to determine the nature and extent of risk by analyzing potential hazards and evaluating existing conditions of vulnerability that together could potentially harm exposed people, property, services, livelihoods, and the environment on which they depend.

**Risk transfer.** The process of formally or informally shifting the financial consequences of particular risks from one party to another. During this process, a household, community, enterprise, or state authority will obtain resources from the other party after a disaster occurs, in exchange for ongoing or compensatory social or financial benefits provided to that other party.

**Risk retention.** Risk management strategy for planned acceptance of and financial responsibility for expected losses from a given risk. Risk-retention instruments include reserve funds, contingency funds, and other self-insurance mechanisms. This approach is usually appropriate for risks that have higher frequencies and lower severities of impact.

**Vulnerability.** The physical, social, economic, and environmental conditions that increase the susceptibility of an individual, a community, assets, or systems to the impacts of hazards.



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**Disaster Risk Financing  
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