

# DISASTER RECOVERY FRAMEWORK GUIDE

REVISED VERSION

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**GFDRR**  
Global Facility for Disaster Reduction and Recovery

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## **ACRONYMS AND ABBREVIATIONS**

<b>ADB</b>	Asian Development Bank
<b>BBB</b>	Building Back Better
<b>BRR</b>	Agency for the Rehabilitation and Reconstruction of Aceh and Nias – Indonesia
<b>CCRIF</b>	Caribbean Catastrophe Risk Insurance Facility
<b>CERC</b>	Contingency Emergency Response Component
<b>CFO</b>	Commission on Filipinos Overseas – Philippines
<b>CMTs</b>	Construction Monitoring Teams
<b>CSOs</b>	Civil Society Organizations
<b>DRF</b>	Disaster Recovery Frameworks
<b>DRM</b>	Disaster Risk Management
<b>DRR</b>	Disaster Risk Reduction
<b>DRU</b>	District Reconstruction Units – Pakistan
<b>ERRA</b>	Earthquake Reconstruction and Rehabilitation Authority – Pakistan
<b>EU</b>	European Union
<b>FAiTH</b>	Foreign Aid Transparency Hub – Philippines
<b>GDP</b>	Gross Domestic Product
<b>GFDRR</b>	Global Facility for Disaster Reduction and Recovery
<b>IFI</b>	International Financial Institutions
<b>INGC</b>	National Institute for Disaster Management – Mozambique
<b>IRA</b>	Internal Revenue Allotment
<b>LGU</b>	Local Government Units
<b>LINKAPIL</b>	Lingkod Sa Kapwa Pilipino – Philippines
<b>MDTFs</b>	Multi-Donor Trust Funds
<b>MIRA</b>	Multi-Cluster/Sector Initial Rapid Assessment
<b>MRAZI</b>	Ministry for Restructuring and Managing Flood Zones
<b>NDRRMF</b>	National Disaster Risk Reduction and Management Fund – Philippines
<b>NGOs</b>	Nongovernmental Organizations
<b>OPARR</b>	Office of the Presidential Assistant for Rehabilitation and Recovery – Philippines
<b>PDNA</b>	Post-Disaster Needs Assessment
<b>PEC</b>	Pakistan Engineering Council
<b>PERRA</b>	Provincial Earthquake Reconstruction and Rehabilitation Authority – Pakistan
<b>PFM</b>	Public Financial Management
<b>PPP</b>	Public-Private Partnerships
<b>RMS</b>	Results Monitoring System
<b>RRF</b>	Reconstruction and Recovery Fund – Yemen
<b>SERRA</b>	State Earthquake Reconstruction and Rehabilitation Authority – Pakistan
<b>UNDP</b>	United Nations Development Programme
<b>UNISDR</b>	United Nations International Strategy for Disaster Reduction
<b>WebEOC</b>	Web-Based Emergency Operations Center – Philippines



## INTRODUCTION AND SUMMARY

This is a revised and updated version of the Disaster Recovery Framework Guide that was originally issued in 2015. It provides new and improved examples of recovery experience, focusing on results. It mainstreams the need for pre-disaster preparation throughout all modules of the guide, based on the idea that strengthened recovery systems will make recovery quicker and more effective. A module dedicated to pre-disaster preparation has been added and placed at the front of this guide to highlight its importance. Finally, two new areas have been added, one focusing on the specificities of disaster recovery at the local level, and one on recovery in conflict and post-conflict contexts.

The Disaster Recovery Framework Guide, revised version, is intended as a practice-based, results-focused tool to assist governments and partners in planning for resilient post-disaster recovery<sup>1</sup> following a large-scale disaster. It provides key planning and decision-making processes for the development of recovery policies and programs. It is intended primarily for audiences involved with preparedness, planning and management of recovery and reconstruction activities within government systems.<sup>2</sup>

Tools such as the Post-Disaster Needs Assessment (PDNA) or similar assessments provide a solid basis for identifying and quantifying recovery needs.

By developing a disaster recovery framework, a country will be positioned to drive a process forward that unites all government, private sector, donors, development partners, and community efforts with a focus on building back stronger, faster and more inclusively over the short, medium to long term timeframes of recovery. The DRF helps in articulating a vision for recovery; defining a strategy; prioritizing actions; fine-tuning planning; and providing guidance on financing, implementing, and monitoring the recovery. Depending on the scale of recovery required, the framework should be developed within a month or max 45 days after a disaster (and, as discussed below, preferable before a disaster occurs).

Expected outcomes of implementing recovery frameworks are:

1. Informed institutional and policy-setting for recovery
2. Prioritization and programming based on an inclusive, transparent process that ensures participation of all stakeholders and uses national and international good practices

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<sup>1</sup> “Recovery” is defined as: 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. Generally, reconstruction is focused on 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. “Resilient recovery” builds resilience during recovery and promotes resilience in regular development. Resilient recovery is a means to sustainable development.

<sup>2</sup> These groups include policy-makers, leaders, and managers of recovery institutions; financial managers; monitoring and evaluation (M&E) experts; and governmental implementing agencies. Other national stakeholders including civil society organizations (CSOs), nongovernmental organizations (NGOs), and private sector entities also may benefit from the DRF guide.

3. Effective coordination among all parties during the recovery and reconstruction processes
4. Comprehensive framework for recovery financing
5. Improved implementation and monitoring and evaluation systems for recovery programs.

The disaster recovery framework guide is a flexible tool, offering options that can be adapted to an individual country's conditions, and can be revised on a regular basis.

It is important to note that ideally an ex-ante (or before the event) disaster recovery framework should be developed, enabling a government to think about key aspects, such as a common vision, principles, roles, and preliminary recovery program which would speed up the recovery activities. This would also allow a government to prioritize disaster risk reduction and resilience measures within both its short- and long-term development goals.

### **Build Back Stronger, Faster and More Inclusively**<sup>3</sup>

This revised guide helps governments build a recovery framework based on the resilience benefits of building back stronger, faster and more inclusively. These three dimensions of building back better can all contribute to major reductions in the well-being impacts of disasters induced by natural hazards.

**Building back stronger** will reduce well-being losses by ensuring that reconstructed infrastructure can resist more intense events in the future. If all countries were to “build back stronger” in the next 20 years—ensuring that rebuilt assets can resist hazards with a 50-year return-period—then global well-being losses due to disasters induced by natural hazards would be reduced by 12 percent, a gain equivalent to US\$65 billion annually.

**Building back faster** will reduce disaster impacts by accelerating reconstruction through measures such as contingent reconstruction plans, advance procurement arrangement and pre-approved contracts, and financial arrangements. Estimates show that if the average reconstruction period is reduced by two thirds (without compromising the quality of reconstruction), global well-being losses could be reduced by 14 percent—equivalent to increasing global consumption by over US\$75 billion per year. These gains are especially pronounced in countries with frequent events, such as small island countries or Sub-Saharan countries.

**Building back more inclusively** will ensure that post-disaster support reaches all affected population groups. This emphasizes the importance of providing reconstruction support to low-income households, which are typically more exposed, more vulnerable, and less comprehensively supported. If all countries had the ability to provide the poorest people with the post-disaster support found in developed countries, global well-being losses due to disasters induced by natural

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<sup>3</sup> This information is drawn from the report “Building Back Better: Achieving resilience through stronger, faster and more inclusive post-disaster reconstruction, was produced in 2018 by Stephane Hallegatte, Jun Rentschler and Brian Walsh, GFDRR. It is available at: <https://openknowledge.worldbank.org/bitstream/handle/10986/29867/127215.pdf>.

hazards could be reduced by 9 percent, equivalent to a US\$52 billion increase in annual global consumption.

## **Structure of this Guide**

The detailed content of the DRF guide is arranged in six modules.

### **Module 1: Pre-Disaster Preparation for Recovery**

Module 1 examines various reforms and improvements to legal, institutional, operational and financial arrangements that can be developed and implemented in advance of disasters.

### **Module 2: Conducting Post-Disaster Assessments**

Module 2 establishes the link between the PDNA, or similar disaster assessments, and the Disaster Recovery Framework (DRF).

### **Module 3: Recovery Policy**

Module 3 describes the key planning and policy considerations that need to be incorporated into the DRF. This will include guiding recovery vision, principles, prioritization of recovery activities, and good practices as well as the key results associated with developing programs for an integrated, cross-sectoral disaster recovery.

### **Module 4: Institutional Arrangements**

Module 4 describes good practices and key results associated with the development of effective institutional structures, leadership and human resources—for overseeing, managing, coordinating and implementing reconstruction.

### **Module 5: Financial Mechanisms**

Module 5 concentrates on the major financing challenges of post-disaster reconstruction. These challenges include quickly quantifying the economic and financial costs of the disaster, confirming the funding gaps, developing reconstruction budgets, identifying sources of financing, and setting up the mechanisms to manage and track funds.

### **Module 6: Implementation Arrangements**

Module 6 introduces key considerations that governments and recovery actors need to be aware of to ensure that program implementation is effective, equitable, timely, and working toward building back a better future for the disaster-affected population.

## **Additional Resources in the DRF Guide**

Advanced technologies that have been applied to recent disasters and other new relief technologies are summarized in Annex 1. A Results Framework (Annex 2) provides a clear overview of all outputs and outcomes generated by the recovery process. A glossary of commonly used terms is included after the annexes with standard definitions. A Checklist is provided at the end of each

module to provide a short catalogue of activities that the responsible lead recovery agency and corresponding affected sector agency need to consider as they move through the recovery and reconstruction process—before and after a disaster.

### **Additional Sectoral and Thematic Guidance**

The DRF guide is not an in-depth treatment of all sectoral recovery issues and challenges. Instead, it focuses on broader multi- and intersectoral recovery planning aspects. For sectoral and cross-cutting recovery, guidance notes and specific documents are available online at Recovery Hub<sup>4</sup>. The notes are aimed at providing action-oriented and concise guidance aimed at social, productive and infrastructure sectors. Separate guidance is also available on engaging local actors in the recovery process and on recovery in situations of fragility/conflict. Detailed country case studies and thematic appendices also are available at <https://www.gfdr.org/en/recovery-framework>.

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<sup>4</sup> The Recovery Hub website can be accessed at: <https://www.gfdr.org/recovery-hub> . Recovery Hub consists of a set of guidance notes and quick references on key economic and development sectors. It is a web-based ‘one-stop shop’ that GFDRR has put together to enhance timely and effective disaster recovery processes.



## **MODULE 1. PRE-DISASTER PREPARATION FOR RECOVERY**

Each component of post-disaster recovery which is presented in this guide can be anticipated and prepared to some extent before a disaster strikes to support a stronger, faster and more inclusive recovery. This phase is called pre-disaster preparation and focuses on the strengthening of recovery systems which can be mobilized quickly when a disaster strikes.

Strengthening recovery systems involves enhancing governmental and other stakeholders' capacity to help a country recover from disasters. Strengthening recovery systems requires defining and strengthening institutional and financial systems that support a recovery process. Experience in recovery has shown that political commitment at all levels is key to a successful DRF. If there is no continuous dialogue between the technical staff in charge of preparing

the DRF and the higher political levels in charge of making decisions, there may be no ownership or even willingness by the higher levels to institutionalize and implement the DRF. Likewise, there may be strong ownership at the higher political level but no commitment at the local levels of government, due to a lack of communication or pre-existing disagreements. This means that the team in charge of preparing the DRF may have difficulties in gathering data at the local level, which is key to effective drafting of a DRF. Therefore, working on securing political commitment at all levels via ongoing dialogue and communication is central to the success of a DRF. When drafting the DRF, the technical team should keep the high-level authorities informed and involved, in order to validate each of the key proposals for recovery.

Pre-disaster recovery preparedness encompasses a range of policies and actions that can be taken in advance to support governments and communities to build back stronger, faster, and more equitably when disasters strike. Preparing for recovery enables government planners to engage communities and vulnerable groups and to institutionalize and build capacity for inclusive recovery. Developing advanced procurement arrangements permitting standards and protocols can expedite everything from housing reconstruction, to data collection for recovery.

Governments can strengthen their recovery systems before a disaster strikes through three specific approaches: assessments, recovery frameworks, and financial arrangements.

### **Strengthen Needs Assessments**

#### **Develop Capacity to Implement Post-Disaster Needs Assessments**

Before a disaster occurs, the government can identify a standard assessment tool to be used in case of a disaster. The tool could be a PDNA or similar assessment methodology. By settling on the particular assessment, gathering baseline data, and training people to use it in advance, governments will be ready when a disaster strikes to immediately carry out assessments to

establish reliable and comparable data. Additionally, an agreed assessment tool would enable the production of data drawn from previous recovery experiences.

Prior agreement on the assessment tool also will improve its efficiency, accuracy, and ground applicability. One way these improvements will be achieved is by pre-designating the institution(s) or agency(ies) responsible for maintaining PDNA preparedness, including baseline data, and conducting the assessments. This designated entity could be responsible for training through national and regional support centres. The training programs could simulate actual field conditions and provide examples of good practice and lessons learned related to assessments. Training could be used as an opportunity to develop rapid assessment methodologies to speed up PDNAs. The time saved will leave more time to formulate and implement recovery strategies during a disaster.

### Pre-Disaster Baseline Database Preparation is Needed to Conduct PDNAs and DRFs

The lack of pre-established baseline data to support the development of a DRF or post-disaster assessment has been a key impediment to undertaking PDNAs and DRFs in an efficient manner. It is therefore recommended that governments develop solid baseline data before disasters strike. Comprehensive baseline data should be built for each sector/line ministry typically affected by a disaster and shared between institutions and stakeholders responsible for the recovery.

Below is a sample list of typical data and sources to consolidate baseline data prior to disaster:

Type of Data	Source of Data
Country or city population Disaggregated composition of communities Household data General maps for country and cities Annual economic and social data Poverty and vulnerability profile and maps Most recent available information on income Sustainable and Human Development indices Conflict & violence (including gender-based violence) Annual rainfall data Annual production statistics and forecasts Utilities status Number and size of existing facilities Alternative, temporary solutions for shelter Existing human resources, equipment and supplies Regular budget Institutional management Unit costs for typical activities/assets/products Etc.	Line ministries, local governments, private sector, social organizations, civil society organizations, grassroots, community Population census (urban/rural) Annual economic and social surveys Sustainable development reports Human Development report Reports from line ministries Development plans Reports from the ministry of finance Reports from the national statistics institute Innovative, low-cost tools such as remote sensing, modelling and social media analytics

*Table 1: List of indicative pre-disaster baseline data and source of information*

Governments should think of a strategy to collect information on these in the areas that are at risk of being struck by a disaster.

### **Prepare and Institutionalize Recovery Frameworks Prior to a Disaster to Support Efficient and Effective Disaster Recovery Processes**

By preparing and institutionalizing recovery frameworks, countries and stakeholders will be in a strong position to maintain continuity from the humanitarian relief phase to early recovery and reconstruction, and longer-term sustainable development across a range of possible post-disaster activities. A pre-prepared recovery framework will help bring consensus on issues that can be pre-defined among the multiple stakeholders involved in disaster response, freeing the lead agency to focus on implementation. These efforts made in advance can formalize and predict at least some of the strategic and resource commitments that may be needed for recovery planning, implementation, and performance management.

Key elements of a disaster recovery framework (DRF) before a disaster that can be put in place before a disaster include the formulation of recovery policies and the establishment of institutional, financing and implementation mechanisms.

Institutionalizing recovery roles and responsibilities can help mitigate recurring challenges in terms of national ownership, implementation and development cooperation. For example, the effectiveness and role of institutions tasked with disaster recovery planning and management are maximized if such entities are established prior to a major event. By having a draft organizational chart in place, implementers can spend less time on negotiating these issues after a disaster occurs. Further, as part of the preparedness efforts, the necessary capacity can be identified and built to coordinate and implement recovery efforts.

#### **Institutionalized Structures for Recovery.**

Of the country cases used in this guide, Laos, Mozambique, Turkey, and Yemen have maintained pre-existing disaster management and recovery entities. Chile, Indonesia, the Maldives, Pakistan, Senegal, and Sri Lanka created such entities only in the wake of major disasters. and sometimes for a limited period to manage recovery

Shared standards for reconstruction, including those for construction and building codes, could be defined prior to a disaster. For example, by standardizing reporting tools, whether they are related to budgeting or monitoring and evaluation, ongoing advance training could be organized for people responsible for these areas. This training will enable them to be familiar with the tools ahead of the disaster, again leading to time saved and rapidity in setting up a disaster recovery framework.

Before a disaster strikes, governments should establish policies which will enable a coordinated recovery process post-disaster. This could include, for example, a definition of eligibility criteria for government assistance for the affected communities, and the setting of sectoral standards for Building Back Better (BBB). Further, without the pressure existing in the post-disaster

environment, policy makers have time to research and analyse good and bad practices of other recovery processes to inform their recovery decision-making.

This is also an opportune time to identify civil society and private sector partners, develop a policy on coordination mechanisms, and support the establishment of similar recovery planning frameworks at the community level.

Even though pre-disaster planning is beneficial, few governments try to put it into practice. Challenges cited include insufficient resources and competing demands, and the diminished will to invest in pre-disaster management. In some cases, the impetus to pro-actively prepare for recovery has only come about due to recent recovery failures. The management of the 2005 Hurricane Katrina recovery by the U.S. government pressured the legislature to pass the Post-Katrina Emergency Management Reform Act of 2006. This Act charged the Federal Emergency Management Agency (FEMA) with developing a National Disaster Recovery Framework. However, examples do exist of government agencies that have developed recovery frameworks as a pro-active measure to accelerate a more sustainable social and economic recovery. Described in the below, the city government of Los Angeles committed funds and resources to establish a permanent process of developing and revising an earthquake recovery framework.<sup>5</sup>

#### **Pre-disaster Planning for Post-Earthquake Rebuilding in Los Angeles<sup>6</sup>**

In 1987, William E. Spangle and Associates released a study, Pre-Earthquake Planning for Post-Earthquake Rebuilding, (PEPPER) which is the theoretical foundation for the City of Los Angeles recovery and reconstruction planning effort. This study documented research on the feasibility and practical limits of pre-earthquake planning for rebuilding. The study concluded the high annual probability of a damaging earthquake in Los Angeles requires a continuing program of pre-earthquake planning for post-earthquake recovery. The City of Los Angeles adopted many of the recommendations contained in the PEPPER study.<sup>7</sup> Upon the release of the PEPPER Report, a Recovery and Reconstruction Subcommittee was established. This Subcommittee was charged with developing a work program to address the major recovery and reconstruction problems following a damaging earthquake. These problems included:

1. Organization and Authority
2. Residential, Commercial and Industrial Rehabilitation

<sup>5</sup> Text extracted from: Guidance Note on Recovery Governance, UNDP and IRP

<sup>6</sup> Source: City of Los Angeles Emergency Operations Organization Recovery and Reconstruction Plan, Retrieved from [http://www.emergency.lacity.org/pdf/epa/Recovery\\_and\\_Reconstruction\\_Annex.pdf](http://www.emergency.lacity.org/pdf/epa/Recovery_and_Reconstruction_Annex.pdf)

<sup>7</sup> They recommended that the planning process include periodic re-evaluations of anticipated problems and necessary responses, and development of policies and procedures for post-earthquake land use planning and rebuilding. The study also recommended that the City establish a Rebuilding/Recovery Team to be activated immediately following a major disaster. To function effectively, this Team would require a well-defined role, responsibility and authority for rebuilding and restoration, and pre-established guidelines to follow. A model earthquake recovery program was offered, as well as a model ordinance for a rebuilding and recovery organization to be established prior to an earthquake.

3. Public Sector Services
4. Economic Recovery
5. Land Use/Re-use
6. Psychological Rehabilitation
7. Vital Records

*Box 1: Pre-disaster Planning for Post-Earthquake Rebuilding in Los Angeles*

Pre-disaster recovery policies, plans, agreements, or arrangements must be regularly maintained, updated, validated, tested, and applied.

### **Establish Predictable Financing**

Governments need to explore practical ways to set aside funds for disaster recovery in their fiscal strategies to reduce the budget shock of disasters induced by natural hazards. Long-term development prospects suffer as the government diverts public funding from social and economic development programs to fill the recovery gaps. Reconstruction may be delayed or not take place at all due to a lack of resources.

There are two levels of financial mechanisms to support an efficient and effective recovery process that could be established before a disaster.

1. The first is to build the lead agency's capacity to receive large donor contributions. This mechanism consists of establishing draft agreements with potential donor governments and setting up mechanisms to receive and manage contributions.
2. The second financial mechanism is internal to the country. It is the aid-tracking mechanism that enables the lead agency to manage, disburse, and account for funds with local implementers.

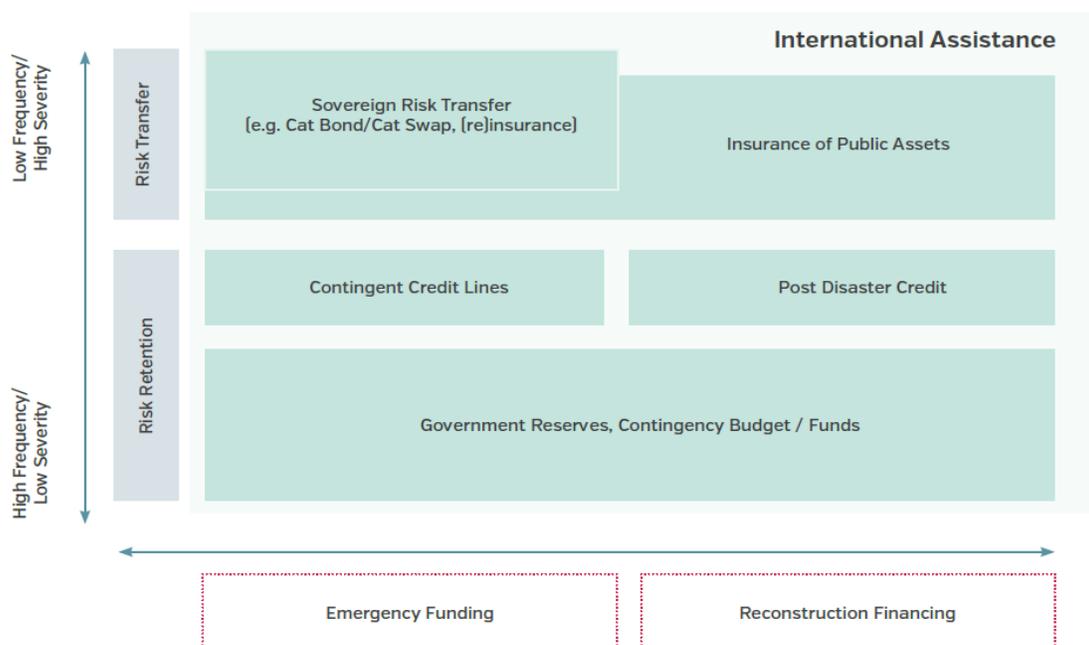
Disaster risk finance strategies for governments combine different financial instruments to protect against possible losses in events of different frequency and severity. These instruments can support governmental efforts to invest in enabling efficient risk markets, leveraging private sector capital and expertise through public private-partnerships, and promoting domestic disaster risk insurance markets.

Developing a disaster financial protection strategy requires effective leadership by a country's Ministry of Finance or equivalent institution. As a first step, the ministry should prioritize its key policy objectives and, ideally, identify in advance its post-disaster spending priorities. Next, officials would have to consider possible solutions and decide on the country's own ideal combination of financial tools.<sup>8</sup> Below are a few examples of the risk layering tools that can be developed ahead of a disaster.

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<sup>8</sup> Disaster Risk Finance to Build Financial Protection, GFDRR, World Bank, 2015.

## Risk Layering



Source: World Bank, *GFDRR Disaster Risk Finance and Insurance Program*, Washington, DC, 2015.

Figure 1: Risk Layering of Disaster Risk Financing

### National Contingency Budgeting

As part of disaster risk finance strategies, when governments are identifying potential financial instruments to protect against losses, contingency funding mechanisms are an important one. Contingency funds can be embedded in the country's budget as part of a fiscal rule associated with a savings fund that can be used in the case of disasters induced by natural hazards or national emergencies, with clear criteria for the use of resources accumulated as well as a transparent governance and accountability mechanism for the use of the funds. A contingency instrument could be the establishment of a tax or surcharge to be placed into a fund that can be drawn on when a disaster occurs. Another example is to put unused funds at the end of a budgetary year into a special budget specifically for disaster recovery. While the sources of the funds could differ, the primary aim is to have them in place before the disaster for a more rapid recovery.

### International Financial Institutions Contingency Funding

International financial institutions (IFIs) can contribute significantly both technically and financially toward creating contingency disaster risk funding mechanisms in less developed countries. In more developed or transitional economies, IFIs can help set up advanced risk transfer mechanisms.

Developed by the World Bank and launched in 2010, Catastrophe Deferred Drawdown Options (Cat-DDOs) combine the provision of immediate liquidity following a disaster with requirements for a risk reduction policy program. As a policy instrument, the Cat-DDO engages countries on high-level dialogue about vulnerability reduction and resilient development, supporting governments developing integrated risk management strategies and investments that go beyond disaster. As a contingent financing instrument, Cat-DDOs provide much needed budget support after major natural catastrophes. Since July 2017, Cat-DDO has also become available to the International Development Association (IDA) countries, providing more opportunities to access contingency funds. The first Cat-DDO for the Caribbean was approved on September 28, 2017, providing a US\$150 million contingency loan to the Dominican Republic to help meet financing needs after natural catastrophes. In 2019, the Asian Development Bank (ADB) launched a similar financing mechanism, contingent disaster funding (CDF). By completing loan processing, essential policy dialogue and policy reforms before disasters occur, the CDF enables flexible financing to be disbursed quickly in the immediate aftermath of disasters.

### **Catastrophe Deferred Drawdown Option (Cat-DDO) in the World<sup>[1]</sup>**

As of March 2020, US\$2.4<sup>[1]</sup> billion funds have been approved for CAT DDOs across World Bank IDA and IBRD portfolio.

Overall in Sub-Saharan Africa, US\$337 million funds have been approved— including CAT DDOs in Cabo Verde (US\$10 million), Kenya (US\$200 million), Malawi (US\$70 million), the Seychelles (US\$7 million) and Madagascar (US\$50 million) —and helped drive progress that includes monitoring and evaluation systems for the policy frameworks to ensure that they contribute to increasing resilience over the long term. Preparatory work for similar programs is now underway in Benin, Lesotho, Senegal, Sierra Leone, Mauritius with the total of US\$195 million anticipated commitments.

In East Asia and Pacific region CAT DDOs in Samoa (\$13.7 million), Vanuatu (\$10 million) and Tuvalu (US\$13.5 million) were approved with the total of US\$37.2 million of committed funds. CAT DDOs are being prepared in Lao and Fiji with the anticipated funding of US\$94 million.

In Latin America, overall 5 CAT DDOs have been approved with the total funding of US\$686 million including the Cat-DDOs in Guatemala (\$200 million), Dominican Republic (US\$ 150 million), Colombia (US\$250), Grenada (US\$20) and Panama (US\$66). CAT DDOs are in the preparatory stage for Haiti, St. Vincent and Grenadine and Honduras.

There are two CAT DDOs in Europe and Central Asia (Serbia and Romania), one CAT DDO in South Asia (Maldives) and one in Middle East and North Africa (Morocco). CAT DDOs are being prepared in Tunisia, Bhutan and Nepal.

*Box 2: Catastrophe Deferred Drawdown Option (Cat-DDO) in the World in 2019*

Contingent Emergency Response Component (CERC) is an ex ante mechanism available to borrowers to gain rapid access to World Bank financing to respond to an eligible crisis or

<sup>[1]</sup> Source: Source: GFDRR Annual Report 2019 “Bringing Resilience to scale” 120pp

<sup>[1]</sup> This includes Philippines CAT DDO 2 which is active and has disbursed US\$ 500 million.

emergency. CERCs allow for the rapid reallocation of uncommitted funds towards urgent needs in the event of a crisis or an emergency. Such events may include cyclones, floods, earthquakes, droughts, and disease outbreaks. CERCs are embedded in an Investment Project Financing (IPF), typically, with zero funds allocated to them. If the CERCs are activated following a Borrower's request for World Bank support for an eligible emergency or crisis<sup>9</sup>, the funds can be used quickly without an initial need for formal project restructuring —minimizing time and effort when it matters most. Formal restructuring is deferred to within three months after activation. Active IPFs can be restructured to include CERCs.

## Disaster Risk Insurance

Disaster risk insurance, which can include agricultural insurance, property catastrophe risk insurance, and social protection, aims to increase the financial response capacity of national and subnational governments to secure cost-effective access to adequate funding for emergency response, reconstruction, and recovery.<sup>10</sup> The examples below illustrate insurance mechanisms developed at the national, regional and international levels.

- **State Established Insurance: The New Zealand Earthquake Commission (EQC) Model<sup>11</sup>**

The Earthquake Commission cover (EQCover) is an example of a State established, non-for-profit natural disaster insurance mechanism that supports the recovery of private citizens. The Earthquake Commission (EQC) is a Crown entity in New Zealand, established under the Earthquake Commission Act of 1993. It provides State provided (non-for-profit) natural disaster insurance cover for loss and damages from an earthquake, a natural landslide, a volcanic eruption, hydrothermal activity, and a tsunami. It insures New Zealand property owner of residential land (within limits) against storm and flood damage. It also insures for fire resulting from any of these disasters induced by natural hazards, including coverage for contents, dwellings and some coverage of land. It covered land damage after the Canterbury Earthquakes. New Zealanders automatically have this cover (called EQCover) for their home and land if they have an active private insurance policy for their home that includes fire insurance (and most do).

- **Regional Insurance to Protect Food Security in Africa<sup>12</sup>**

The African Risk Capacity (ARC) was established in November 2012 as a Specialized Agency of the African Union (AU) to help member states improve their capacities to better plan, prepare and respond to extreme weather events and disasters induced by natural hazards, therefore protecting the food security

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<sup>9</sup> An eligible crisis or emergency is “an event that has caused, or is likely to imminently cause, a major adverse economic and/or social impact associated with natural or man-made crises or disasters” (as defined in OP 8.00 “Rapid Response to Crises and Emergencies”). Such events may include a disease outbreak.

<sup>10</sup> For additional details, see GFDRR's Disaster Risk Financing and Insurance (DRFI) Program, <https://www.gfdr.org/disaster-risk-financing-and-insurance>.

<sup>11</sup> Source: <https://www.parliament.nz/en/pb/research-papers/document/00PlibCIP161/insurance-and-reinsurance-after-canterbury-earthquakes>

<sup>12</sup> Source: Rapport final d'exécution technique et financière du Plan définitif de mise en œuvre PDMO 2015, Cellule technique ARC, Sénégal

of their vulnerable populations. ARC is composed of two entities: The Specialized Agency and a financial affiliate, ARC Insurance Company Limited (the Company). The Company carries out commercial insurance functions of risk pooling and risk transfer in accordance with national regulations for parametric weather insurance. In 2012, the State of Senegal joined the African Risk Capacity Insurance Company (ARC) to strengthen its capacity to manage risks related to disasters induced by natural hazards, to adapt to climate change and to assist inhabitants who are vulnerable to the threat of food insecurity

The insurance premium that Senegal paid to ARC was USD 3.6 million. In 2014 Senegal received a total payout of 16,5 million US dollars from ARC to provide assistance to 927 416 food insecure people and to purchase 14 839 tons of cattle feed which was sold at subsidized prices to livestock farmers.

- **Regional Insurance's Caribbean Catastrophe Risk Insurance Facility (CCRIF)**<sup>13</sup>

The Caribbean Catastrophe Risk Insurance Facility (CCRIF SPC) is the first multi-country risk pool in the world, and the first insurance instrument to trigger payouts using parametric data like storm strength and rainfall. It provides rapid payouts to help member countries to finance their initial disaster response and continue providing critical services, mitigating the short-term cash flow problems in the wake of major disasters from natural hazards, allowing governments to mobilize additional funding. CCRIF offers earthquake, tropical cyclone and excess rainfall policies to Caribbean and Central American governments. In July 2019, the Facility, in collaboration with the World Bank and the US State Department, introduced coverage for the fisheries sector for two member countries – Saint Lucia and Grenada. Currently, 19 Caribbean countries/territories and Nicaragua, Panama and Guatemala are members of the CCRIF. Since the inception in 2007, the Facility has made 41 payouts to 13 member governments on their tropical cyclone, earthquake and excess rainfall policies totaling over US\$152 million. All payouts were transferred to the respective governments within 14 days after the event.

CCRIF was developed under the technical leadership of the World Bank and with a grant from the Government of Japan. In 2014, an MDTF was established by the World Bank to support the development of CCRIF SPC's new products for current and potential members and facilitate the entry for Central American countries and additional Caribbean countries. The MDTF currently channels funds from various donors, including Canada, through Global Affairs Canada; the United States, through the Department of the Treasury; the European Union, through the European Commission; and Germany, through the Federal Ministry for Economic Cooperation and Development and KfW.

In addition to the Caribbean, the World Bank has supported other countries to establish regional insurance facilities. For example, it has helped the Pacific island countries establish the Pacific Catastrophe Risk Insurance Company (PCRIC) and is working with Southeast Asian countries, starting with Cambodia, Lao PDR and Myanmar, to establish the Southeast Asia Disaster Risk Insurance Facility (SEADRIF).

*Box 3: State, Regional and International Insurance Models for Disasters Recovery*

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<sup>13</sup> Source: <https://www.ccrif.org/>

Additional predictable financing sources for emergency response and early recovery could be found in the following documents/instruments:

- UNDRR: Words into Action: Build Back Better<sup>14</sup>
- International Recovery Platform Guidance Note on Recovery: Pre-disaster Recovery Planning<sup>15</sup>
- FEMA: Pre-Disaster Recovery Planning Guide for Local Governments<sup>16</sup>
- UN Humanitarian agencies: UN Inter-Agency Pooled Funds<sup>17</sup>, Central Emergency Response Fund<sup>18</sup> and Country Humanitarian Funds<sup>19</sup>
- The International Humanitarian NGOs, etc.

However, it is important to highlight the limitations of these response mechanisms and the need for a viable financial mechanism for recovery and reconstruction. Those instruments will be discussed in Module 5: Financial Mechanisms

## **Module 1 Checklist**

This checklist covers the different steps required to strengthen recovery systems before a disaster occurs and defining institutional and financial systems. The checklist provides an overview of the primary steps to be followed.

### **Develop Capacity to Implement Disaster Assessments**

- ✓ Identify a standard assessment tool to be used in case of a disaster.
- ✓ Pre-designate the institution(s) or agency(ies) responsible for maintaining post disaster assessments preparedness and conducting the assessments.
- ✓ Develop training programs that simulate actual field conditions and provide examples of good practice and lessons learned related to assessments.
- ✓ Develop rapid assessment methodologies to speed up PDNAs.
- ✓ Develop the pre-disaster (baseline) database (sectoral and national) to mobilize it quickly once the disaster has hit.

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<sup>14</sup> Source: <https://www.undrr.org/publication/words-action-guidelines-build-back-better-recovery-rehabilitation-and-reconstruction>

<sup>15</sup> Source: [https://www.recoveryplatform.org/assets/Guidance\\_Notes/Guidance%20Note%20on%20Recovery-Pre%20disaster%20Recovery%20Planning.pdf](https://www.recoveryplatform.org/assets/Guidance_Notes/Guidance%20Note%20on%20Recovery-Pre%20disaster%20Recovery%20Planning.pdf)

<sup>16</sup> Source: <https://www.fema.gov/media-library-data/1487096102974-e33c774e3170bebd5846ab8dc9b61504/PreDisasterRecoveryPlanningGuideforLocalGovernmentsFinal50820170203.pdf>

<sup>17</sup> Source: [https://www.un.org/ecosoc/sites/www.un.org.ecosoc/files/files/en/qcpr/6\\_%20UN%20Inter-agency%20pooled%20funds.pdf](https://www.un.org/ecosoc/sites/www.un.org.ecosoc/files/files/en/qcpr/6_%20UN%20Inter-agency%20pooled%20funds.pdf)

<sup>18</sup> Source: <https://cerf.un.org/>

<sup>19</sup> Source: <https://www.unocha.org/our-work/humanitarian-financing>

### **Prepare Recovery Frameworks Prior to a Disaster to Improve Resilience**

- ✓ Define the vision and guiding principles of recovery processes.
- ✓ Clarify the roles and responsibilities of all potential stakeholders in a recovery, including the private sector, NGOs and local communities.
- ✓ Define pre-established coordination mechanisms.
- ✓ Share standards for reconstruction including building codes.
- ✓ Standardize reporting tools, whether they are related to budgeting or monitoring and evaluation.
- ✓ Define standards of eligibility of government assistance for the affected communities.
- ✓ Define sectoral standards for Building Back Better (BBB).

### **Develop Predictable Financing Arrangements**

- ✓ Prioritize the key policy objectives and identify in advance the post-disaster spending priorities.
- ✓ Build the lead agency's capacity to receive large donor contributions.
- ✓ Build an aid-tracking mechanism that enables the lead agency to manage, disburse, and account for funds with local implementers.
- ✓ Embed contingency funds in the country's budget that can be used in the case of disasters induced by natural hazards or national emergencies. Set aside some funds for disaster recovery from the contingent funds.
- ✓ Consider disaster risk insurance mechanisms to increase the financial response capacity of national and subnational governments and secure cost-effective access to adequate funding for emergency response, reconstruction, and recovery.

## **MODULE 2. HUMANITARIAN, POST-DISASTER ASSESSMENTS AND - RECOVERY CONTINUITY**

A post-disaster needs assessment (PDNA) or other assessments such as a rapid assessment or a remote disaster needs assessment<sup>20</sup> are a prerequisite for developing a DRF. The affected country decides which damage and needs assessment methodology will be used to conduct the initial assessment. The PDNA is one methodology for estimating damages, losses and needs that is often used. The intent of Module 2 is to establish the continuity between the Humanitarian assessment, the PDNA, or similar disaster assessments, and the Disaster Recovery Framework.

### **Humanitarian assessments and early recovery**

Governments and international actors conduct rapid assessments in the immediate aftermath of disasters to identify relief and humanitarian needs. These assessments are often organized around clusters that will use their sector-specific assessment methodologies and tools. These assessments may be carried out jointly, such as through the Multi-Cluster/Sector Initial Rapid Assessment (MIRA).<sup>21</sup> The cluster system is essentially about humanitarian operations. In some cases, these humanitarian assessments identify early recovery needs. In other cases, separate assessments are designed specifically to identify early recovery needs.

Early recovery can start while humanitarian response activities are ongoing. UNDP defines early recovery as “a multidimensional process of recovery that begins in a humanitarian setting. It aims to generate self-sustaining, nationally owned, resilient processes for post crisis recovery. It encompasses the restoration of basic services, livelihoods, shelter, governance, security and rule of law, environment and social dimensions, including the reintegration of displaced populations.” Properly implemented, early recovery can stabilize a situation, prevent further deterioration in national capacity, as well as foreshorten the humanitarian phase.

A decision made by the government to carry out a more comprehensive disaster assessment is a transitional step from humanitarian phase to full-scale recovery and reconstruction. This decision can be implemented through a Global Rapid Post-Disaster Damage Estimation (GRADE) approach and/or a rapid/full PDNA.

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<sup>20</sup> For details on the remote assessment methodology, see the “Methodology” section of the Iraq Damage and Needs Assessment of January 2018:

<http://documents.worldbank.org/curated/en/600181520000498420/pdf/123631-REVISED-Iraq-Reconstruction-and-Investment-Part-2-Damage-and-Needs-Assessment-of-Affected-Governorates.pdf>

<sup>21</sup> For more information about MIRA methodology, please visit

<https://www.humanitarianresponse.info/en/programme-cycle/space/document/mira-manual>

## **The Global Rapid Post-Disaster Damage Estimation (GRADE) approach**

The GRADE approach was developed by the World Bank and supported by GFDRR. The GRADE approach<sup>22</sup> can provide an initial rapid (approximately within two weeks) estimation of the post-disaster physical damage incurred by key sectors. The approach prioritizes the housing and infrastructure sectors, followed by other sectors, like agricultural production, as desired. The GRADE approach and outputs are intended to create an independent, credible sectoral quantification of the spatial extent and severity of a disaster's physical impact. To quantify damage to a higher level of detail, the GRADE approach employs disaster risk modelling techniques in combination with historical damage data, census and socio-economic survey data, satellite imagery, drone footage, and other media.

In the last five years, the GRADE methodology has successfully been applied in over 15 countries, covering earthquakes, hurricanes/cyclones, floods and volcanic eruptions worldwide. These include but not limited to in Albania (after the M 6.4 earthquake in November 2019), Myanmar (after the floods and landslides in July 2019), Mozambique, Zimbabwe, Malawi and Comoros (after cyclones Idai and Kenneth in April 2019), Indonesia (after M 7.5 Sulawesi earthquake in September 2018), Guatemala (after Volcano Fuego eruption in June 2018), Dominica (after Hurricane Maria in September 2017), and Nepal (after the earthquake on April 25, 2015). GRADE was used to assess direct damages to property; direct damage estimations by economic sector; potential impacts on gross domestic product (GDP) and the economy; and, in the case of earthquakes, estimations of human casualties. Indirect losses due to reduced productivity, business interruption, and output loss are not at present addressed by GRADE. The approach precedes/complements other post-disaster damage and loss assessment approaches and processes, such as the PDNA.

## **Post-Disaster Needs Assessment and full-scale recovery and reconstruction**

Depending on the magnitude of the disaster, the government can decide to undertake a more detailed assessment of damages, losses and needs across affected sectors and geographical areas.

Assessments can take different forms depending on the type and size of the disaster and on the national context. It is important that governments build their capacity with respect to the different assessments' methodologies, prior to a disaster, to be able to deploy qualified teams on the ground to conduct the assessment once the disaster strikes.

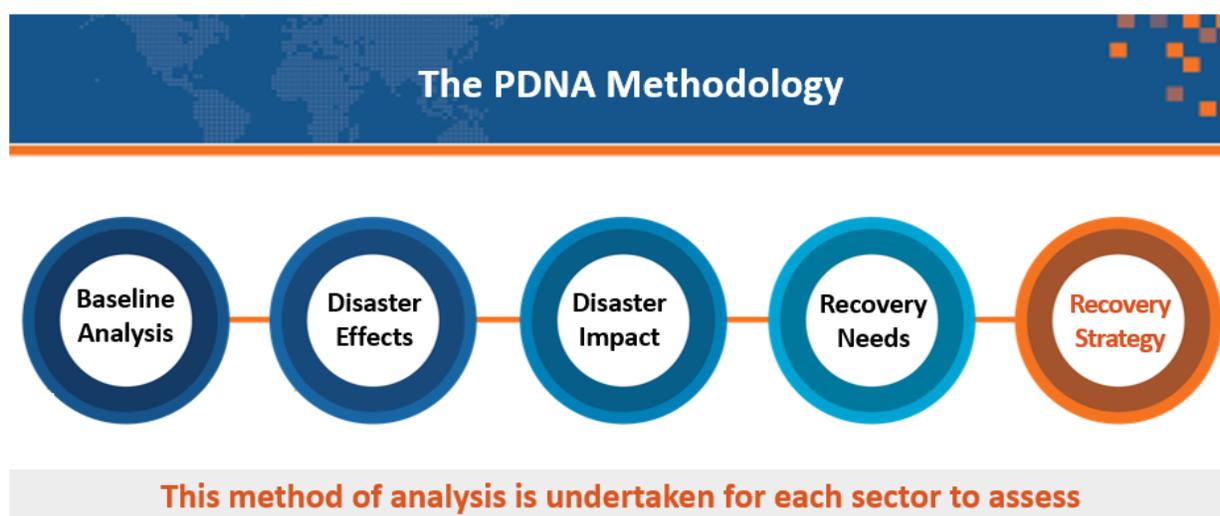
The Post-Disaster Needs Assessment (PDNA) is a common methodology developed jointly by the EU, UN, and World Bank to support governments to assess damages, losses and recovery needs.

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<sup>22</sup> For details on GRADE approach, see the Methodology note <http://www.preventionweb.net/publications/view/57947>.

<sup>23</sup> It is an inclusive process that builds on the capacity and expertise of national and international actors. When participating in such assessments, the PDNA Guides Volumes A and B should be used. Volume A presents the general methodology while Volume B is sector specific.

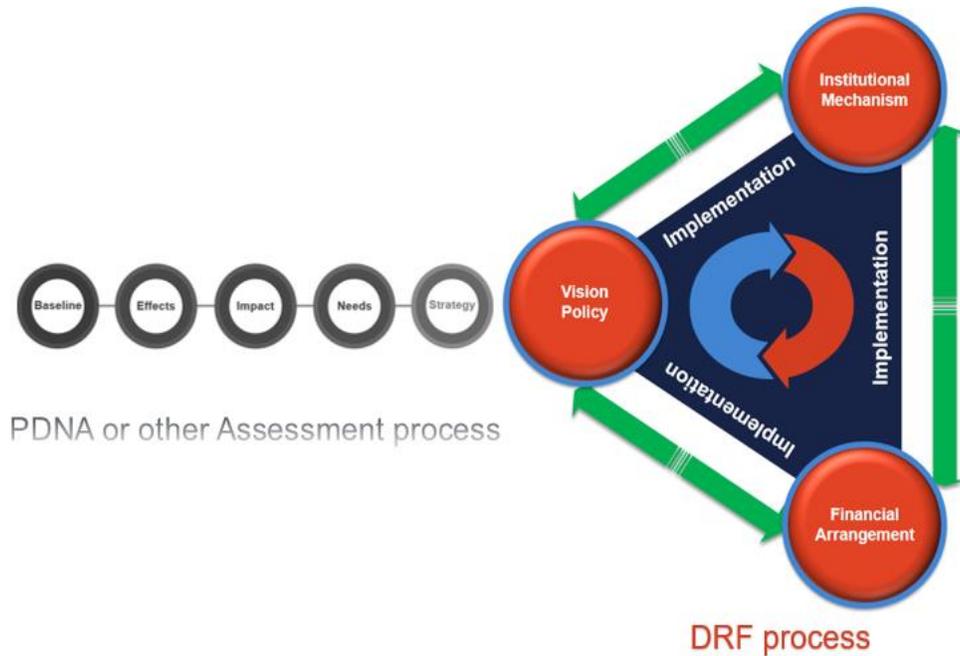
This tool is being used in an increasing number of countries with the support of the international community, particularly for larger scale emergencies. The main goal of PDNAs is to provide a comprehensive empirical basis for costing the effects and impact and the post-disaster recovery and reconstruction needs and to inform the potential international donor conference. Based on the needs identified in a PDNA, the DRF will define available resources and realistic corresponding measures to implement the recovery.



*Figure 2: The five components of the PDNA methodology*

The second step after the PDNA or in parallel to it, is to build on the recovery framework (DRF) using the assessment results and the recovery needs identified.

<sup>23</sup>For additional details on conducting a PDNA, see EU (European Union), UN (United Nations), and World Bank, Post-Disaster Needs Assessment Guide, Vol. A, 2013, <https://www.gfdr.org/recovery-hub>



*Figure 3: Transition from Post-Disaster Assessments and Recovery Framework processes*

The DRF is more detailed than the PDNA on the recovery measures to implement and the corresponding financing resources available. The DRF provides a detailed sequencing, prioritization, financing, and implementation arrangements of the recovery activities in the short, medium and long terms. The PDNA and the DRF can be undertaken together. In most instances, combining the process will not require additional financial resources or time. In fact, the process will significantly increase the likelihood of translating PDNA recommendations into a recovery that is sustainable.

In some cases, Governments can decide to conduct sector assessments by using the relevant line ministries. In the sectors in which they have expertise, international organisations such as the World Bank, the United Nations (UN) system, or the European Union (EU) can support sector-specific assessments, applying the appropriate assessment methodologies and tools.

## Ensure Continuity from Disaster Relief to Recovery and Development

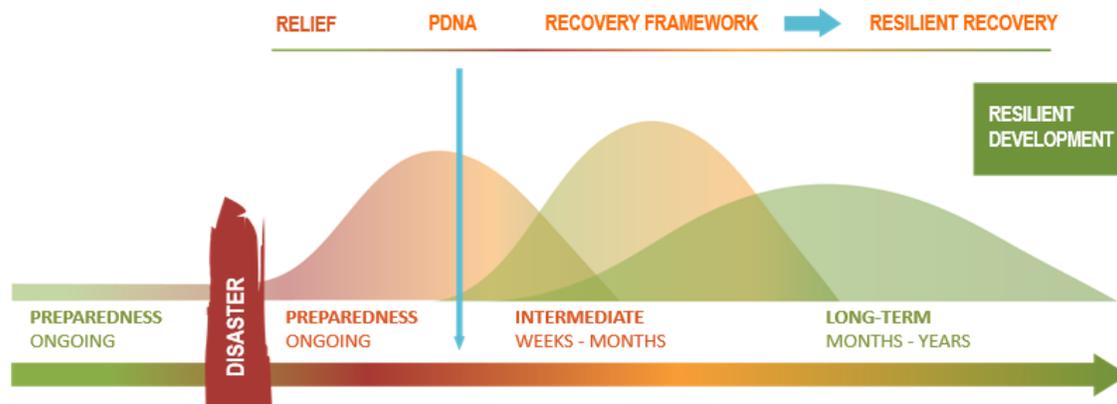


Figure 4: Continuity between Humanitarian Relief, PDNA, Recovery and Development<sup>24</sup>

Humanitarian relief, post-disaster assessments, early recover and reconstruction should be a continuum of activities following a disaster, contributing all to the objectives of resilience and sustainable development. The timeline of the phases depends on the nature and magnitude of the disaster, but also the recovery resources available (human, technical, and financial).

Therefore, sustainable recovery and a return to longer term development should be an integral part of emergency relief planning. Relief workers need to develop programs that ensure that relief efforts will contribute to the recovery of national and local systems. These programs should concentrate on providing a safe environment capable of delivering basic services, improving livelihoods, lessening the risk of another crisis, and creating conditions for future sustainable development.

To ensure the maximum impact from the relief phase to early recovery activities, the United Nations' Inter Agency Standing Committee (IASC)<sup>25</sup> developed the Inter-Cluster Approach. The aim is to strengthen system-wide preparedness and technical capacity to respond to humanitarian emergencies and provide clear leadership and accountability in the main areas of humanitarian response. At country level, it aims to strengthen partnerships, and the predictability and accountability of international humanitarian action, by improving prioritization and clearer definition of the roles and responsibilities of humanitarian organizations.<sup>26</sup>

Each cluster will mainstream early recovery from the outset of the humanitarian response.

<sup>24</sup> Adapted from National Recovery Framework/FEMA 2011

<sup>25</sup> <https://interagencystandingcommittee.org>

<sup>26</sup> Benefits of the Cluster Approach include: Supporting service delivery by providing a platform for agreement on approaches and elimination of duplication; Informing strategic decision-making of the HC/HCT for the humanitarian response through coordination of needs assessment, gap analysis and prioritization; Planning and strategy development including sectoral plans, adherence to standards and funding needs; Advocacy to address identified concerns on behalf of cluster participants and the affected population; Monitoring and reporting on the cluster strategy and results; recommending corrective action where necessary; and Contingency planning/preparedness/national capacity building where needed and where capacity exists within the cluster.

A practical way to ensure continuity from humanitarian response to recovery is to ensure that the relief data and information are shared/transferred to recovery agencies when required.

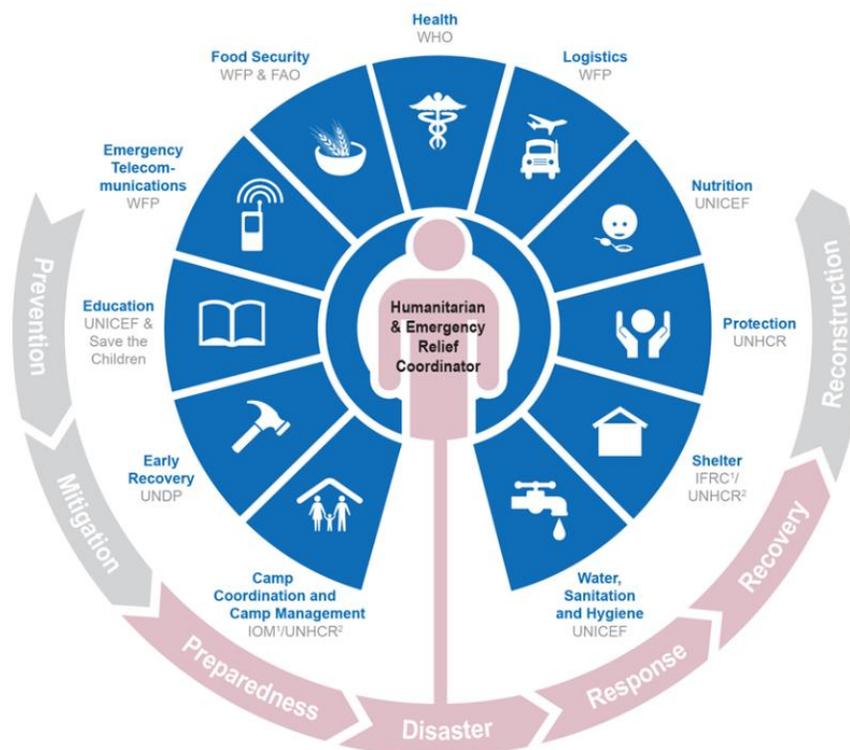


Figure 5: Cluster sectors and DRM cycle<sup>27</sup>

## Module 2 Checklist

This checklist covers the different steps required to carry out a PDNA or other similar assessment. The list provides an overview of the primary steps to be followed.

1. **Draft terms of reference.** The terms of reference guide the needs assessment regarding the sectors to be covered, data to be collected, teams to be deployed, and reports that need to be prepared.
2. **Schedule and timeframe.** The needs assessment should commence after 1 or 2 weeks of disaster. However, the schedule can vary depending on the scale and nature of the disaster. Completing the needs assessment can take a minimum of 3 to 6 weeks. Before the needs assessment is begun, the government must ensure that the relief phase of disaster is almost over and that conducting a needs assessment would not impede the continuance of any relief activity.
3. **Government participation.** The government must nominate its officials and experts to participate in the needs assessment.

<sup>27</sup> Source : <https://www.humanitarianresponse.info/en/about-clusters/what-is-the-cluster-approach>

4. **Formation and training of sector teams.** The needs assessment must cover all affected sectors. For each sector, the government will choose a team that will include the relevant experts from the government departments and other agencies. The government also must support the training of sector teams in needs assessment methods through training programs.
5. **Collection of baseline and primary data.** Government agencies should provide baseline data in relation to all the sectors that are being assessed
6. **Field visits.** Sector teams must undertake field visits to carry out assessments. These field visits need to be organized by the government. The number of field visits as well as the places to be visited will be decided in consultation with the government agencies.
7. **Writing the report.** The write up of the report must be based on the thorough analysis of the data collected from the various institutions, actors and field visits. This includes the gap analysis and quantification of the effects of the disaster, in terms of physical damage and economic losses. The macroeconomic and human impacts of the disasters should also be described and quantified. All sector teams must write their sector-specific reports and submit them to a core writing team, who will prepare and finalize the needs assessment report.
8. **Review and approval of the needs assessment report.** The report will be submitted to the government for its review. The government will circulate the report within various ministries/departments for their comments. The review needs to be conducted with a strict deadline. The writing team will incorporate the comments and finalize the report. Once the final PDNA or similar assessment report is submitted to the government, the government should approve it. The needs assessment report then becomes official and will form the basis for recovery planning and implementation.

## MODULE 3. RECOVERY POLICY

Recovery planning and policy-making should start before a disaster strikes and be adjusted as early as the humanitarian phase begins. It encompasses the development of a central vision for recovery, the setting up of a programmatic and centrally overseen approach, the adoption of planning principles, the definition of principles for prioritization recovery programs, the development of recovery policies following key policy imperatives including land use planning considerations, and the design of sector-specific programs. This approach is suitable both for large- and small-scale disasters. In case of a local or small disaster, and in smaller countries, these processes could be reduced considerably, becoming simpler and quicker. The scale of disaster, the size of country, the number of affected people, would determine the more practical approach to recovery planning.

### Develop a Central Vision for Recovery

The articulation of a recovery vision enables the government to convey its recovery priorities and build national or subnational consensus around them. The vision is the starting point around which the entire recovery process will be formulated. The vision usually reads as short as a single sentence. Yet, it results from a cohesive work of consultations and analysis, to ensure that all relevant stakeholders committed to it. The core elements to consider when formulating a recovery vision follow.

- **Ensuring that the vision is developed at the highest level of government.** Without agreement at the highest level on the vision, it will be hard to leverage the needed resources, built up the capacities and support the implementation of recovery.
- **Carrying stakeholders' consultations for a common recovery vision.** The government can invite groups of internal and external stakeholders (including reconstruction partners) to sessions in which it communicates and seeks input for a vision of recovery.
- **Ensuring alignment with development programs.** The recovery vision must be coherent with the government's broader, longer term development goals. The vision can provide a strategic continuum between pre- and post-disaster development planning by bridging both pre-existing development gaps and new gaps triggered by the disaster.
- **Incorporating resilience and BBB in recovery vision.** To support resilient recovery, this DRF guide recommends that countries pay attention to five issues within their vision: Building Back Better (BBB), gender equity, vulnerability reduction, natural resources and environment protection, climate change adaptation.
- **Optimizing recovery across sectors.** Whenever possible, the recovery vision should encompass public and private sectors, because both may have been affected by the disaster, and both have a role to play in recovery and reconstruction.

- **People-focused.** In the past, infrastructure reconstruction often has dominated the post-disaster recovery conversation and practice. However, equally important is the priority given to the recovery of the lives and livelihoods in disaster-affected communities. People-focused recovery can be facilitated by reconstructing private assets through direct subsidies, where affordable; or through other enabling policy measures, where appropriate.

#### **Example of Recovery Vision in Malawi**

The vision stated in the National Disaster Recovery Framework of Malawi in response to the floods of 2015 was formulated as: “*Reinforce individual and community resilience to natural hazards while fostering equitable, inclusive, and participatory reconstruction that builds back better.*”<sup>28</sup>

*Box 4: Example of Recovery Vision in Malawi*

### **Develop a Programmatic Approach to Recovery**

The Post-Disaster Needs Assessment process, the Disaster Recovery Framework and the Sector and theme-based recovery plans and projects developed at the national and local levels, need to be structured under a Government led program to support the achievement of recovery goals, targets, and priorities, as defined by the vision and policy framework.

Such a programmatic approach should be supported by a central agency. In cases of inter-provincial recovery programs, a recovery planning agency could be located within a central government authority. In cases of subnational or local programs, a recovery planning agency or centre could be located within subnational recovery planning and oversight entities. In a programmatic approach, the activities of government agencies, NGOs, communities, and the private sector complement each other within a government-led framework.

A programmatic and centrally overseen recovery approach would provide an opportunity to exercise strategic and holistic management of recovery, ensure strong oversight and reporting of activities, and promote cross-sectoral and integrated disaster recovery.

Such an approach would include:

- a. consistent application of **policy principles and imperatives** across all sector programs and projects;
- b. harmonized and mutually **reinforcing recovery results** and outcomes across sectors;
- c. needs **prioritization** within and across sector programs;

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<sup>28</sup> Source : “National Disaster Recovery Framework: Building back a Disaster Impacted Malawi Better and Safer, 2015”  
<https://gfdrr.org/sites/default/files/publication/Malawi%20National%20Disaster%20Recovery%20Framework%20Report%202015.pdf>

- d. **sequencing** of recovery activities according to the agreed order of prioritization to ensure the planned outcomes;
- e. mutually **reinforcing governmental and nongovernmental recovery interventions**, and;
- f. a central node from which to **monitor and evaluate recovery**, enabling strategic adjustments to be made as required.

An example of a programmatic approach is the New Zealand Government approach after the Canterbury Earthquakes of 2010 and 2011. The Government established the Canterbury Earthquake Recovery Authority (CERA) in March 2011 to lead and coordinate the on-going recovery effort in greater Christchurch. To support this role, CERA established its Programme Management Office (PMO) to set up a suitable framework, methodology, reporting and governance structure to help manage and deliver its many programmes. The PMO had to establish programme and project controls while emergency response was in full swing and at a time when a strategic direction had not yet been set for the organisation. To enable this, the Senior Leadership Team (SLT) approved the PMO recommendation to establish a programme and project-oriented organization. A portfolio, programme and project (PPP) framework was a logical way to structure the work that CERA was already delivering and would continue to deliver over its lifespan. The six recovery components identified in the Recovery Strategy for Greater Christchurch were ideal portfolio groupings for CERA’s work programme. At CERA’s peak, the six portfolios were made up of 24 programs and 137 projects.

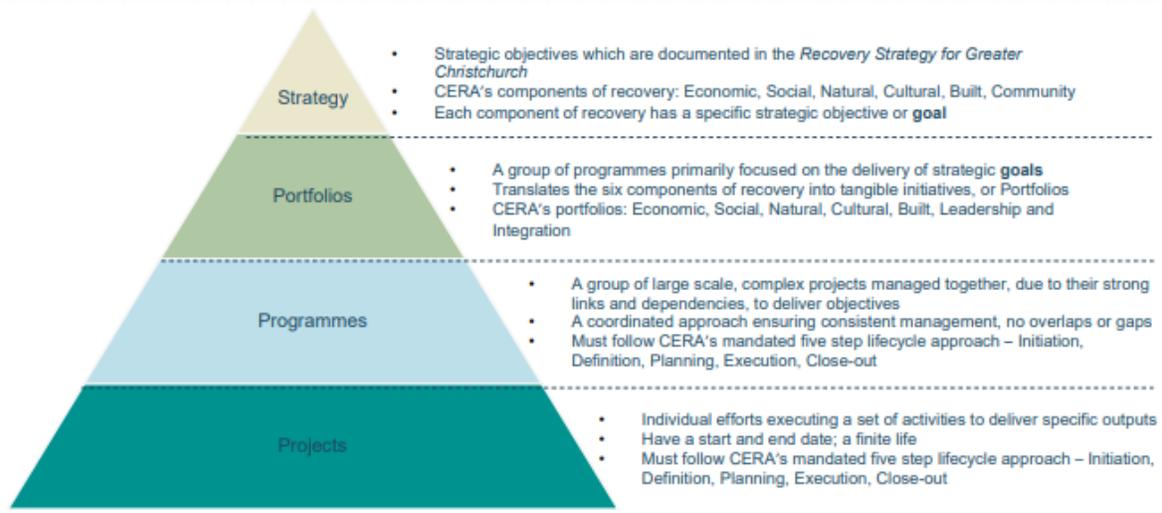


Figure 6: CERA’s Portfolio, Programme and Project (PPP) Framework

The PPP framework and model were consistent with best practice for the successful delivery of a broad, but interrelated, set of outcomes. In CERA's case, a large majority of those outcomes all related to the successful delivery of the Recovery Strategy.<sup>29</sup>

## **Apply Guiding Principles for Recovery**

Successful disaster recovery experiences from around the world have in common the adoption of at least three crucial principles for recovery planning: (a) converting adversity into opportunity, (b) Building Back Better, and (c) prioritizing inclusive recovery of vulnerable groups.

### **Converting adversity into opportunity**

#### **Dominica Hurricanes 2017**

After Dominica was hit by Hurricanes Irma and Maria in 2017, Prime Minister Roosevelt Skerrit shared his vision of converting adversity into opportunity, announcing the plan for his country to become the first climate resilient nation in the world: *"We have no choice...Because we cannot relocate our island. Our island will always remain in the hurricane belt."*

*Box 5: Example of vision for converting adversity into opportunity in Dominica*

Crises can be a vehicle for change and an opportunity for the development of sustainable solutions as governments and populations realize that they need to be better prepared to respond to future disasters. Such awareness in post-disaster contexts can be used by governments as momentum to foster dialogue between all stakeholders affected by a disaster and jointly look for the changes and solutions needed for better preparation and to become more resilient to disaster and climate risks.

The results of consultations could highlight opportunities to better understand climate and disaster risks faced by communities; to be better prepared for the next disaster; to mainstream disaster risk management into policies, planning decisions, and legislation; to prioritize investments that could support resilient communities; to stimulate financial protection opportunities; and to support resilient recovery before a disaster occurs. There could also be an opportunity to launch awareness campaigns towards targeted groups and areas to highlight good disaster risk management practices and share knowledge and common understanding of evacuation paths and assembly zones, location of community shelters, availability of insurance schemes and protection mechanisms, as well as communications channels available when a disaster hit, for example.

Finally, recovery allows to embrace opportunity to identify innovations, both in soft and physical infrastructure, that will strengthen existing systems, practices and ways of living for all citizens.

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<sup>29</sup> For more information and lessons from this PMO example, including information about programme and project lifecycle; recovery programmes; establishing a Programme Management Steering Committee; the Risk Assurance Team; the structure of the PMO and skills required; and lessons identified see: <https://www.eqrecoverylearning.org/assets/downloads/res0016-ceras-programme-management-office2.pdf>.

For example, recovery can support:

- A ripe environment/openness to change for both the public and private sector
- greater public/private sector collaboration—forcing a positive shake-up of service delivery and creating opportunities for greater communication and understanding between service providers.
- One-stop shop approaches to support businesses to access a range of services through one door, avoiding the need to visit multiple agencies and retell their story.
- Stronger information sharing and use of technology—including sharing databases across agencies which can enable faster, more efficient service delivery and customer service
- Leveraging existing innovation capability to support recovery objectives
- Building better service delivery and businesses, not repeating the past.

### **Japan Tsunami 2011**

Recovery from the tsunami disaster that hit Japan in 2011 has been a difficult process for farmers, whose land was strewn with debris and contaminated with seawater. In eastern Sendai, along the coast, some 1,800 hectares of farmland were damaged, most of it rice paddies. Noboru Iki, director of the agriculture and forest department in the Sendai Economic Affairs Bureau, said local authorities decided to consolidate small plots of land into 1-hectare fields after they were desalinated. “The idea was that it would lead to better profitability and more efficiency, and encourage people to return to farming,” he said. The city also organized individual farmers into co-operative businesses, lending them machinery and equipment like tractors and greenhouses, as well as offering financial help. “This was a good measure to cope with the aging of local farmers and their lack of successors,” Iki said. In the wake of the disaster, the city’s agriculture experts have also encouraged a shift into vegetable-growing from the local staple crop, rice. Vegetables are more profitable as they are usually grown close to where they are consumed and so cost less to distribute.

*Box 6: Recovery supports local farmers in Japan for better profitability and more efficiency*

## **Building Back Better**

The United Nations Office for Disaster Risk Reduction (UNDRR) defines Building Back Better (BBB) as the use of the recovery, rehabilitation and reconstruction phases after a disaster to increase the resilience of nations and communities through integrating disaster risk reduction measures into the restoration of physical infrastructure and societal systems, and into the revitalization of livelihoods, economies and the environment. Building Back Better is associated with an initial increase in reconstruction costs. Recovery policy-makers and practitioners lack consensus on what BBB should include or not. However, at a minimum, BBB signifies building back stronger, which is, the policy commitment to right-sizing, right-siting, and improving the resilience of critical infrastructure. According to studies by the World Bank Group, BBB generally

costs about 10 to 50 percent more than simply replacing the original structures. Yet in the long term, the benefits of BBB greatly outweigh the costs, in terms of both economic losses avoided and lives saved.

In addition to focusing on the reconstruction of physical assets, BBB also encompasses non-structural dimensions such as the improvement of policies and institutions so that these can better respond to future disasters. It also involves working towards the improvement of community resilience—for all dimensions of resilience, such as physical or psychological—following disasters.

Around the world, countries are prioritizing BBB to reduce the costs of property damage, business interruption, emergency response, and societal losses. For example, following the 2005 earthquake in Pakistan, more than 90 percent of the 460,000 homes destroyed were reconstructed in compliance with seismic-resistant standards. Significantly, homeowners led the building process, aided by training in seismic-resistant reconstruction and housing grants.

**Building Back Better to reduce well-being losses due to disasters induced by natural hazards**

A study produced in 2018 by GFDRR showed that building back stronger could reduce overall well-being losses due to disasters induced by natural hazards by more than 40 percent in ten countries: Antigua & Barbuda, Dominica, Vanuatu, Myanmar, Laos, Tonga, Guatemala, Trinidad & Tobago, Peru, and Fiji. If all countries were to “build back stronger” in the next 20 years—ensuring that rebuilt assets can resist hazards with a 50-year return-period—then global well-being losses due to disasters induced by natural hazards would be reduced by 12 percent, a gain equivalent to US\$65 billion annually. These estimates illustrate that post-disaster reconstruction offers an opportunity for implementing resilience standards and reducing losses from future events.

*Box 7: Building Back Better to reduce well-being losses due to disasters induced by natural hazards*<sup>30</sup>

### Prioritizing the inclusion of vulnerable groups

Prioritizing reconstruction planning to address the needs of socioeconomically vulnerable individuals and groups contributes to a more equitable society. If their needs are ignored, the poor and vulnerable are more susceptible to future hazards and shocks. Many disaster recovery programs include the provision of direct livelihood support, income generation opportunities, improved access to finance and microcredit, and new skills training. Governments also subsidize

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<sup>30</sup> The report “Building Back Better: Achieving resilience through stronger, faster and more inclusive post-disaster reconstruction, was produced in 2018 by Stephane Hallegatte, Jun Rentschler, Brian Walsh, from the World Bank/GFDRR. It is available at: <https://openknowledge.worldbank.org/bitstream/handle/10986/29867/127215.pdf>

or facilitate the reconstruction of private assets, such as housing and local business enterprises. However, government funding cannot substitute for private insurance to pay recovery costs.

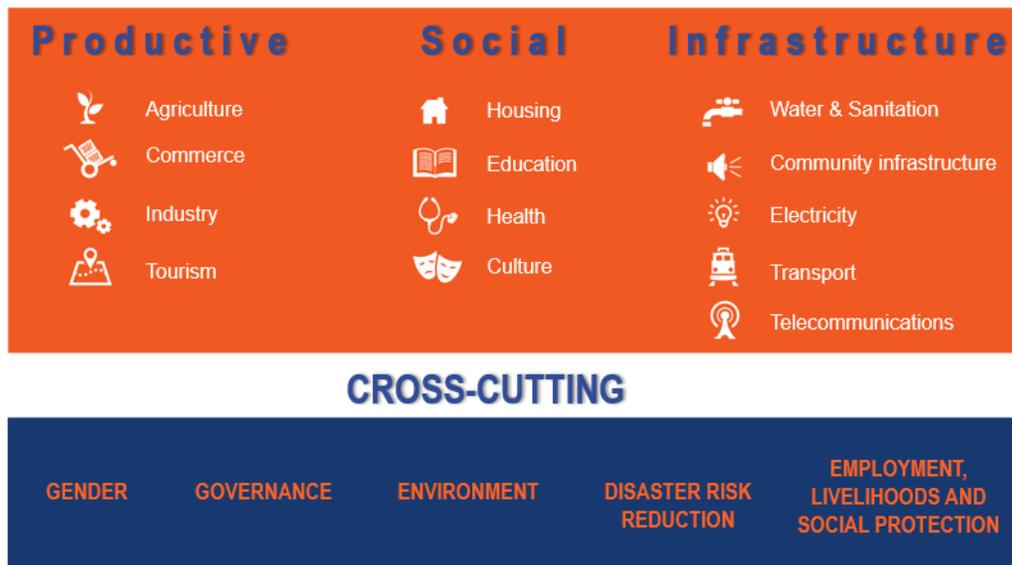
**Supporting the poorest people to reduce well-being losses due to disasters induced by natural hazards**

A study produced by GFDRR in 2018 showed that if all countries had the ability to provide the poorest people with the post-disaster support found in developed countries, global well-being losses due to disasters induced by natural hazards could be reduced by 9 percent, equivalent to a US\$52 billion increase in annual global consumption. The effect is particularly pronounced in countries with high inequality, and where poor people have little access to social protection and financial instruments. In Angola, Benin, Comoros, the Republic of the Congo, the Central African Republic, the Democratic Republic of the Congo, Russia, Gabon, Haiti, and Lesotho, building back more inclusively could reduce disaster losses by 27 percent or more

*Box 8: Supporting the poorest people to reduce well-being losses due to natural disaster<sup>31</sup>*

**Establish Intersectoral Prioritization**

Based on the detailed needs and damage assessment carried out, prioritization of recovery activities across sectors is needed to ensure that the sectors that need it the most, receive help first and foremost.



*Figure 7: Typical sectors, sub-sectors and cross-cutting issues*

<sup>31</sup> The report “Building Back Better: Achieving resilience through stronger, faster and more inclusive post-disaster reconstruction, was produced in 2018 by Stephane Hallegatte, Jun Rentschler, Brian Walsh, GFDRR. It is available at: <https://openknowledge.worldbank.org/bitstream/handle/10986/29867/127215.pdf>.

Intersectoral prioritization takes place i) at the financial level, i.e., the differential amount of financial support to allocate based on the sectoral needs estimated, and ii) at the temporal level, i.e., the short, medium or long-term ranges at which the sectors will receive support. Some sectors need a short and immediate support. Other sectors may be considered to receive a more medium-term support, and for a longer time span.

The assessment upon which the DRF builds up should have identified the criteria for intersectoral prioritization and initial priorities. The DRF will confirm or adjust the prioritization, based on the possible evolving situation of the sector needs since the post disaster assessments was conducted. Indeed, the DRF is a flexible document that can be adjusted along the recovery and reconstruction process. Prioritization can also promote conflict-sensitive, pro-poor, pro-vulnerable, and gender-sensitive recovery agendas.

The first step in prioritizing is to identify the sectors targeted for reconstruction, including those sectors and sectoral priorities that will help leverage direct humanitarian impact in the shortest time. Second, a criteria-based prioritization of recovery needs across competing intersectoral priorities should be made. The case studies in this DRF guide show that housing and livelihoods often take precedence over other sectors because they directly impact disaster-affected populations. The interventions in these two sectors take place simultaneously with restoration of critical public infrastructure and service delivery. Intra-sectorial prioritization, i.e., prioritization within the sectors, should also be established.

Certain criteria used to prioritize recovery actions arise consistently in countries' experiences. These criteria include:

- Potential for direct and widest humanitarian impact
- Pro-poor, pro-vulnerable, and gender-sensitive agendas
- Potential to generate sustainable livelihoods
- Balance between public and private sector recovery
- Balance between physical infrastructure reconstruction and less visible recovery (such as capacity building and governance)
- Restoration and rebuilding of critical infrastructure and services.

#### **Intersectoral Prioritization Post Tropical Cyclone Winston in Fiji, 2016**

The Government of Fiji noted in their DRF that the recovery priorities post TC Winston were based on the needs identified through the humanitarian response, early recovery activities and the PDNA process. In particular, it was noted that the recovery priorities would be:

- **Rebuilding Homes:** to assist in the repair/ reconstruction of damaged houses, relocate affected families living in hazard prone areas to safe areas, and to develop sustainable and disaster resilient settlements

- Restoring Livelihoods: to support the recovery of rural and urban livelihoods and the delivery of employment, livelihood and social protection services at the community level in affected areas
- Repairing and Strengthening Critical Infrastructure to restore and improve infrastructure and to facilitate the delivery of basic services such as education, health, water supply, sanitation and electricity
- Building Resilience to strengthen community and environmental capacity to cope with future disasters

*Box 9: Intersectoral Prioritization Post Tropical Cyclone Winston in Fiji, 2016<sup>32</sup>*

### **Establish Sector-Level Recovery Programs**

The lead recovery agency typically undertakes a program-by-program approach to define sector-specific recovery programs. This process translates the policy priorities into programs and projects that can be financed and implemented. Sector-specific recovery programs and projects are expected to reflect the policy framework and intersectoral strategies. These programs or plans can be overseen by the lead implementation agency. Technical agencies would assist with the conceptualization and development of assessment frameworks, objectives, instruments, and implementation. Establishing sectoral strategies or Sector-based Recovery Programs and Plans early can ensure that they are in line with the government’s overarching vision, objectives and principles for the recovery.

### **Preparatory Actions and Information Collection for Sector Program Development**

The programs would draw on information from assessments, surveys and stakeholder consultation to plan individual sectoral projects. It is recommended that, prior to a disaster, governments and sector-specific institutions develop and coordinate the sharing of baseline information on issues specific to their sectors, for example on matters such as land tenure and census data, including for example, for formal and informal settlements. It will facilitate access to information once a disaster strikes. The lead implementation agency may also engage other public-sector agencies, private sector enterprises, or civil society and community organizations for these purposes.

To inform the development of sectoral recovery programs and projects, the following surveys/assessments may be carried out:

- A **Land Risk Survey/Assessment** is an essential input for determining whether any relocation of communities is necessary.<sup>33</sup>

<sup>32</sup> <https://www.gfdrr.org/sites/default/files/publication/Fiji%20DRF.pdf>.

<sup>33</sup> The following documents provide useful guidance to conduct such type of survey/assessment: “Landslide hazard and risk assessment”. United Nations Office for Disaster Risk Reduction (UNISDR), 2017.

- A **Land Tenure Survey/Assessment** analyses the issue of land and tenure records. Any disputes over ownership may delay, or even stop, the implementation of the sector planning recommendations.<sup>34</sup>
- A **Land Availability Assessment** is a primary means to identify available and suitable land that may prove socially and economically viable for displaced populations.
- A **Governance and Implementation Capacity Assessment** measures the government's capacity to implement programs.<sup>35</sup>
- A **Social Risks and Vulnerability Survey/Assessment** assists in identifying vulnerable disaster-affected persons.<sup>36</sup>
- **Infrastructure and Service Delivery Survey/Assessment** provides results that may help design program components for rehabilitating infrastructure and resuming essential services.
- An **Economic and Livelihood Survey/Assessment** assists in the adequate resumption of economic activities and livelihoods for beneficiaries of the land use and physical plans.<sup>37</sup>

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- European Commission FP7 Project Safe Land (found at Norwegian Geotechnical Institute (2012). SafeLand project. R&D program Safeland. Abstract available from [www.ngi.no/eng/Projects/SafeLand](http://www.ngi.no/eng/Projects/SafeLand))
  - Geological Survey of Canada landslide guidelines (Government of Canada (2017). Hazards: Landslides. Available from [www.nrcan.gc.ca/hazards/landslides/](http://www.nrcan.gc.ca/hazards/landslides/))
  - International Consortium on Landslides (Available from <http://icl.iplhq.org/category/home-icl/> Landslide Hazards Program. Available from <http://landslides.usgs.gov/>)
  - United States Geological Survey landslide hazards programme (Landslide Hazards Program. Available from <http://landslides.usgs.gov/>)
  - Geotechnical Engineering Office, Hong Kong slope safety (Available from <http://hkss.cedd.gov.hk/hkss/eng/index.aspx>)
  - MoSSaiC: Management of slope stability in communities (Available from [www.bristol.ac.uk/geography/research/hydrology/research/slope/mossaiac/](http://www.bristol.ac.uk/geography/research/hydrology/research/slope/mossaiac/))
  - UNISDR global assessment reports on disaster risk reduction (Available from: [www.preventionweb.net/english/hyogo/gar/](http://www.preventionweb.net/english/hyogo/gar/))

<sup>34</sup> The following documents provide useful guidance to conduct such type of survey/assessment:

- "Training Manual for Assessing and Responding to Land Tenure Issues in Disaster Risk Management". David Peter Mitchell, Food and Agriculture Organization of the United Nations (FAO), 2011
- "Land and Disasters induced by natural hazards. Guidance for Practitioners." UN-HABITAT, FAO, IASC Early Recovery Cluster, Global Tools Network. UN-HABITAT, Geneva, June 2010.
- "Land Tenure and Disasters induced by natural hazards. Assessing Land Tenure in Countries Prone to Disasters induced by natural hazards". FAO, UN-HABITAT, IASC Early Recovery Cluster, Global Tools Network. FAO, Rome, January 2011.

<sup>35</sup> The following documents provide useful guidance to conduct such type of survey/assessment:

- "UNDP Capacity Assessment Methodology User's Guide". Capacity Development Group Bureau for Development Policy, November 2008.
- "UNDP Practice Notes on Capacity Development and Capacity Assessment". 2008.

<sup>36</sup> The following documents provide useful guidance to conduct such type of survey/assessment:

- "Social Vulnerability Assessment Tools for Climate Change and DRR Programming - A Guide to Practitioners". UNDP, September 2017.
- "A Guide to the Analysis of Risk, Vulnerability and Vulnerable Groups". Johannes Hoogeveen, Emil Tesliuc, Renos Vakis, Stefan Dercon, World Bank, 2005.

<sup>37</sup> The following document provides useful guidance to conduct such type of survey/assessment for the livelihood linked to the agriculture sector:

- An **Environmental Assessment** is an essential input for the program to safeguard environmental objectives.<sup>38</sup>
- A **Social and/or Health Impact Assessment** are critical for ensuring that recovery programs, plans and projects make a positive social and health impact and do not leave significant social or health issues in the wake of a disaster or poor strategy or operations decisions.

### Setting up Consultative Processes and Forums for Inclusive Planning

Even when centrally initiated and regulated, sector-level program development is most effective when it happens early and includes multiple stakeholders. A consultative process broadens ownership of the recovery program, confirms the recovery needs of each sector, and ensures that sector strategies are relevant across different locations. Thematic open meetings that cut across sectors (such as housing sector recovery planning and housing design) can be organized by the lead recovery agency jointly with the relevant sectoral departments.

Community participation is fundamental to ensure the demand for local ownership and longer-term sustainability of recovery efforts. Communities' participation also ensures that they regain access to viable sources of livelihood, economic infrastructure, and social services that are comparable to or better than those available prior to the disaster.

After the destruction of the central city from the 2011 Canterbury earthquakes, the Christchurch City Council (New Zealand) undertook an extensive consultation process called "Share an Idea"<sup>39</sup> which generated 106,000 ideas<sup>40</sup> from the community in just 6 weeks for the redevelopment of the Central City following the devastating earthquakes. These ideas were reflected in the draft Central City Plan. The final draft Central City Plan documents developed by the Council informed and shaped the Christchurch Central Recovery Plan. This fostered wide public participation with strong attendance at briefings, exhibitions, and workshops. They created the concept of getting everyone to share their idea and brought it to life with a bright, colourful brand identity. They took the message to market and created a website which became a forum for people to post up their ideas (<https://www.strategycreative.com/projects/share-an-idea>.)

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- "The Livelihood Assessment Tool-kit, Analyzing and responding to the impact of disasters on the livelihoods of people", Food and Agriculture Organization of the United Nations (FAO), Rome and International Labor Organization (ILO), Geneva, April 2009

<sup>38</sup> The following documents provide useful guidance to conduct such type of survey/assessment:

- "Guidelines for conducting Integrated Environmental Assessments", United Nations Environment Programme, 2017.
- "Integrated Environmental Assessment Training Manual", United Nations Environment Programme (UNEP), 2009.

<sup>39</sup> <https://www.strategycreative.com/projects/share-an-idea>

<sup>40</sup> <https://www.youtube.com/watch?v=Y8rhXYAE-ZY>



Figure 8: "Share an Idea" consultation approach for Christchurch Central Recovery Plan, 2011

The recovery lead agency must also consider the development of a formal consultation mechanism with key stakeholders and/or community members.

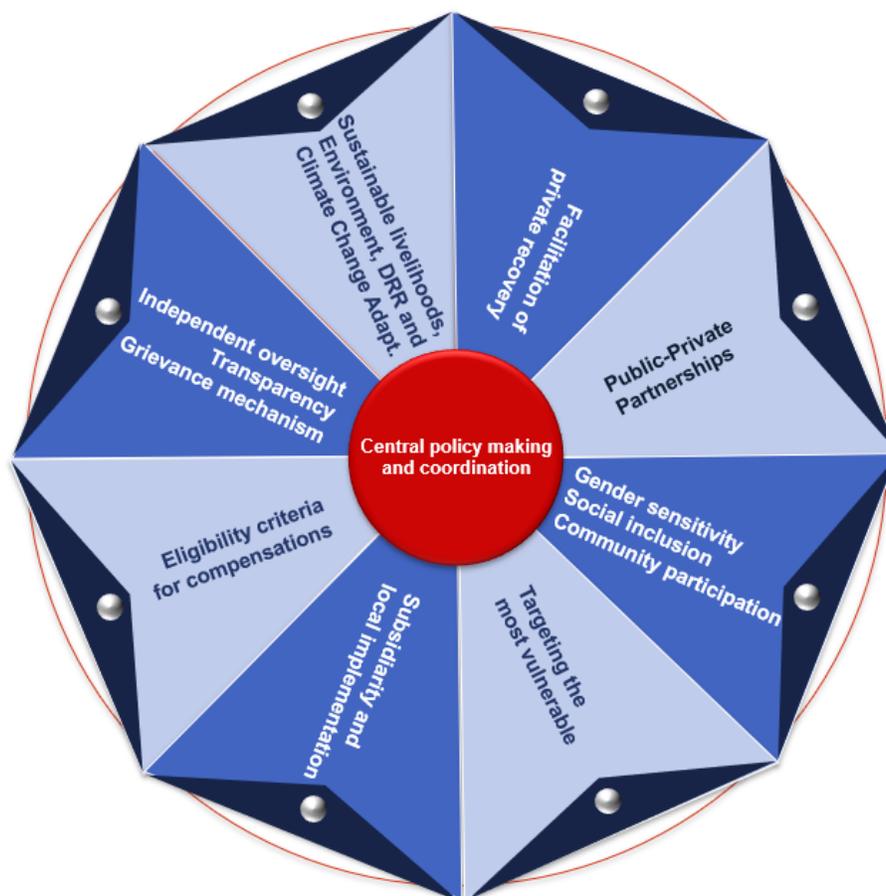
### Develop Recovery Policies

To achieve the vision and to adequately finance and implement post-disaster recovery, the development of recovery policies that cover critical recovery issues is crucial. The policies should be backed by the country's highest political and policy-making levels as well as by its planning and financial institutions. The development of policies requires high-level consensus building around the key planning principles (for example those described above).

The set of policies for large scale recovery typically focus on the following elements:

- Central policy-making and coordination
- Subsidiarity and local implementation
- Public sector facilitation of private recovery
- Restoration of sustainable livelihoods
- Eligibility criteria for benefits in sector-specific issues, such as compensation for renters and squatters
- Independent oversight and transparency
- Grievance redress mechanisms
- Public-private partnerships

- Promotion of longer-term disaster risk reduction and climate change adaptation, environmental and social safeguards, gender sensitivity, and protection of vulnerable groups.



*Figure 9: Some elements of recovery policies for large scale event*

### **Smart Land Use and Physical Planning are Critical to Facilitate Recovery**

Any cities or geographical area in recovery process need clear, coordinated and efficient planning documents and processes in place and these should be identified in the DRF. The development of a Land Use Recovery Plan may be an important part, for example, of the overall DRF and align with Recovery Plans. Such a Plan or outlining critical land use plans in the DRF should provide clear direction to residents, businesses, and councils about where development should occur and what form it should take to support recovery.

Area-wide land use planning should be considered in any recovery and reconstruction process as this process can deliver an integrated treatment of a broad range of land uses: settlements and residential areas; commercial areas and productive infrastructure; public infrastructure; and typically, rural contexts such as community-owned infrastructure, forestry, farmland, animal husbandry, and fisheries. Considerations can include plans for consolidation of unused land,

improvements in energy efficiency, policy on informal settlements, mitigation of environmental impact, reconstruction of strategic towns, green or smart cities, integration of residential, ecological, and economic land uses, and plans for emergency access.

Based on the needs identified, and the vision and principles developed in the DRF, part of the recovery process will involve review of legislation and regulations—including pipeline land use plans—to:

- ensure there is alignment with the DRF or any recovery strategy, vision, principles;
- reduce any exposure of people to disaster and climate hazards;
- enable reconstruction and remove barriers that could hinder recovery and reconstruction efforts;
- ensure social and environmental safeguards are included in all recovery and reconstruction practices;
- reduce uncertainty for stakeholders and affected public; and
- for any resettlement purposes.

Identify needs for land use planning reviews and amendments. For example, new/amended plans or regulations may be needed to provide delivery mechanisms to:

- provide for a range of housing opportunities, including social and affordable housing;
- meet the land use needs of residential and business activities in existing communities and in greenfield areas to accommodate rebuilding and growth;
- support recovery and rebuilding of central city, suburban and town centres—including density level aims and support an equitable recovery process for indigenous and vulnerable people;
- ensure that repair and development of transport networks and service infrastructure support these activities;
- identify key activity centres and supports these and neighbourhood centres to meet the needs of businesses and communities;
- take account of natural hazards and environmental constraints that may affect rebuilding and recovery; and
- support coordination of infrastructure delivery with release of land for both business and housing.

Identify what timeframe and which areas are covered by any land use plan, including residential, business, community, industrial land development. For example, this might be for as long as the DRF is expected to be in effect or take a longer view which may be more appropriate to align with longer-term development—for example, 5-15 years.

A Land Use Recovery Plan may address, for example:

- The location and mix of residential and business activities;

- Priority areas for residential and business land development;
- Ways to provide for a range of housing types, including social and affordable housing;
- Ways to support recovery and rebuilding of urban, suburban and town centers;
- Ways to support delivery of infrastructure and transport networks to serve priority areas;
- Recovery of resources such as water, air, soil, minerals and energy, plants and animals (if not addressed by other recovery programs—e.g. a Natural Environment Recovery Program); and
- Future use of land—especially where it has been deemed uninhabitable.

Any planning process may identify critical actions required in the short and medium term to coordinate and advance decision making about land use, as well as who is responsible for these actions and when they must be completed. These actions provide certainty for the community, landowners, infrastructure providers and others about where new housing and business development will be located, and how commercial centres and damaged areas should be redeveloped.

All decisions on resource consents, or changes to planning documents, must be consistent with the DRF and other recovery plans. The requirement to be consistent with DRF also applies to other instruments under central and local government legislation, including annual plans, long-term plans and triennial agreements, to regional land transport strategies and programmes and to various conservation or environment policies and strategies.

As part of this review and any amendments being planned it will be important to involve planners, social and environmental scientists, other technical specialists, and key stakeholders in the review process and any amendment process.

Importantly, the review and development of land use plans<sup>41</sup> and regulations *before a disaster hits*, encompassing provisions for disaster response and recovery, can support a faster and more effective response, recovery and reconstruction process. The act of planning may result in identification of risk areas and the determination of normative rules, which can prohibit land use or alter property and tenure rights.<sup>42</sup> The planning process should then aim to reduce, during all phases of intervention, the risks associated with populations exposed to disaster.

In conclusion, if shelter and land use planning is considered an essential pillar of recovery and reconstruction, it should be balanced with livelihoods planning and programs which are very critical for social and economic recovery at household level.

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<sup>41</sup> FAO's Voluntary Guidelines on the Responsible Governance of Tenure define land-use planning as land policy formulation, encompassing legal and technical implementation on the ground, a master plan and zoning.

<sup>42</sup> The land-use planning process can also improve the capacity of the poor and most disadvantaged by empowering them through public participation and collaborative decision-making. Public participation adds legitimacy and transparency to the process of policy formulation and programme development and promotes social acceptability. Moreover, land-use planning favors gender equality by considering the needs of women with respect to spatial arrangement of communities.

## **Module 3 Checklist**

This checklist covers the different steps required to develop an effective planning, vision, policies, and strategies for recovery. The checklist provides an overview of the primary steps to be followed.

### **National Planning Agency**

- ✓ Define a national recovery vision incorporating the development principles of: Build Back Better, Converting Adversity into Opportunity and Prioritizing recovery of vulnerable groups;
- ✓ Ensure vision is coherent with the government's broader, longer-term development goals and growth and poverty reduction strategies;
- ✓ Formulate a recovery policy which prioritizes sectors for recovery, and defines key operating principles and performance benchmarks;
- ✓ Ensure consensus of all participants on policy framework. Setting up Consultative Processes and Forums for Inclusive Planning;
- ✓ Develop a program framework that sequences and makes a criteria-based prioritization of sector recovery; and
- ✓ In conflict situations, ensure neutral and impartial treatment.

### **Lead Recovery Agency**

- ✓ Contribute to development of recovery vision and policy
- ✓ Support the development of guiding principles
- ✓ Communicate top recovery priorities to donors, recovery partners and to affected communities.
- ✓ Set Program-Level Objectives for Recovery. Program objectives specify what is meant by effective, efficient and resilient recovery in the country and post-disaster context
- ✓ Create forums for consultation with subnational government, civil society, technical institutions, academia, private sector, and affected communities. Multi-stakeholder forums are crucial for building ownership of sector recovery programs at all levels.
- ✓ Rethink pre-existing policies on land use zoning and the provision of physical infrastructure.
- ✓ Balance the physical recovery for housing and infrastructure with livelihood recovery of individuals and households.

### **Line Ministries**

- ✓ Contribute to development of recovery vision and policy;
- ✓ Support the development of guiding principles;
- ✓ Set up sector level recovery strategy;
- ✓ Identify recovery priorities within each sector; and

- ✓ Promote sector needs in line with the broader recovery vision and policy framework and based on the detailed needs and damage assessment carried out in conjunction at the disaster assessment stage.

## **MODULE 4. INSTITUTIONAL ARRANGEMENTS**

How institutions are set up to respond, recover and rebuild from a disaster will play a critical role in whether recovery and reconstruction will proceed smoothly or fail. Institutions with responsibilities in the recovery process need to be identified or established (where there are gaps) and are resourced appropriately early so there is the capacity and capability needed for managing and implementing the recovery effort. This will involve clarifying roles and responsibilities across agencies -partners or NGOs outside the Government in some cases. Going further, if there is clarity on what each institution will be doing early (or ideally before a disaster occurs) then the opportunity to reduce duplications (and associated costs) and to integrate activities appropriately across the recovery process will increase. Confirming institutional arrangements and clarifying roles/responsibilities is critical at both the national, local and community levels. Program implementation must be coordinated, with well-communicated coordination mechanisms, since it may involve the private and public sectors, communities, and market-driven recovery.

Module 4 describes good practices and key results associated with the development of institutional arrangements for overseeing, managing, and coordinating recovery.

### **Selecting an Effective Lead Agency to Manage the Recovery**

Ideally the lead recovery agency should be identified at the start of the recovery.<sup>43</sup> This would prevent the possibility of competition between agencies to win the lead once the disaster strikes. The selection of the lead agency usually depends on five criteria, which are:

- a. characteristics of the disaster;
- b. current governance structure;
- c. agency's prior disaster recovery experience;
- d. agency's convening power to include communities in defining and implementing their recovery process, and capacity to work with local authorities and nongovernmental organizations; and
- e. overarching coordination, monitoring, oversight, and control frameworks in operation among a country's agencies, line ministries, local governments, and civil society.

The decision regarding the lead agency must be made urgently.

The profile of the lead agency for post-disaster reconstruction will depend on the magnitude and nature of the disaster. A factor that may influence the selection of lead agency is **the geographic impact of the disaster (such as cutting across jurisdictional lines)**. Agency capacity should be

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<sup>43</sup>Ideally, the selection of the lead agency and other institutional arrangements to prepare for a future disaster will have been made in advance. See Module 2 on pre-disaster preparation.

anticipated for different scales and types of disasters, since the needed capacities and resources may differ accordingly.

An immediate step following a disaster is for the government to **assess a lead agency's (and corresponding policy and implementation agencies') existing capacity to conduct post-disaster recovery and the full estimated duration of reconstruction**. Capacity assessments should be undertaken to examine lead agency and sector-specific requirements. The two main criteria to measure the capacity of an entity to manage recovery are human resource capacity and skill sets. It is recommended that governments identify, before a disaster strikes, their capacities to plan and implement recovery, including human, financial and technical resources. If pre-disaster preparation has been conducted, the post-disaster assessment and mobilization of skills and logistical capacities should be merely a verification.

**The lead agency must have the ability to respond to the urgency to deliver results by keeping its focus on deliverables and targets.** The lead agency will need a proven track record of being able to distribute resources efficiently and effectively; producing results under tight deadlines; of multitasking; of collaborating with other agencies, local authorities, and civil society; and of being flexible about working within quickly evolving circumstances.

**Capacity to manage contracts and procurement is critical.** Consideration of a lead agency's capacity to manage contracts is important for the procurement of reconstruction, equipment and material, evaluation of tenders, and oversight of recovery projects. These processes require dedicated time and human resources as well as specific technical knowledge. This means that governments should prepare before a disaster strikes to ensure that they have the right procurement and financial management capacities in place to respond quickly when a disaster strikes. Disaster response may need accelerated procurement processes, which require the pre-disaster establishment of transparency, accountability and monitoring and evaluation frameworks to avoid the risk of corruption and misuse of funds. In some recovery operations, third-party contractors form a substantial bulk of the implementers. In these cases, the skill and logistical capacity of the lead agency to manage contracts is critical to the successful implementation of the recovery.

**The lead agency also should be able to coordinate disparate recovery efforts.** In developing the recovery program, the lead agency pays special attention to harmonizing strategies across sectors. This will avoid duplication and ensure that cross-cutting needs are jointly understood and covered efficiently. Harmonizing strategies also means ensuring the fair and effective use of resources to avoid discrimination against minorities and inequities in spending and quality of delivery.

### Three options for lead agency structure

The three most typical compositions of lead recovery agencies follow.



*Figure 10: Three options for recovery institutional arrangement*

1. ***Strengthen existing sectoral institutions/line ministries to lead the reconstruction by sector.*** This option depends on establishing recovery frameworks under which individual line ministries work independently to manage recovery, and to supervise and implement projects, in their sectors. This option usually begins with the line ministries jointly preparing an action plan for recovery that identifies the respective roles and activities of the line ministries to support reconstruction. In this option, the existing capacities of government line ministries must be adequate or strengthened to deal with additional urgent responsibilities. Possible difficulties include:
  - Rapid recruitment of temporary human resources may not adequately supplement the capacities.
  - Recovery coordination may be difficult if the line ministry staff lack sufficient experience.
  - Line ministries may struggle to focus on recovery programs at the expense of longer-term goals.
2. ***Create a new institution to manage recovery.*** This option creates a single lead implementing agency. This agency envisions, strategizes, plans, implements, and controls the overall multisectoral reconstruction program. The creation of a new institution may be desirable in situations in which existing government agencies are unlikely to be able to coordinate and implement a high number of additional projects at increased speed while sustaining their routine public services. The new agency can be created with a built-in end-

date, i.e., for a set period considered to implement the recovery, or for an indefinite period as an agency that will be responsible to implement all future disaster recovery. This option has several advantages such as the agency's autonomy, the clear line of responsibilities, effective internal and external communication, and the capacity to handle complicated financial and monitoring and evaluation (M&E) arrangements. Resources for this option could be brought in from other relevant agencies, through secondments, private sector consultants, short-term assignments, and financial recoupment arrangements.

Potential disadvantages of option 2 include the lead agency's lack of authority to achieve results, possible lack of ownership by line ministries, and the line ministries' potential institutional resentment due to compromised authority and duplicated mandates at various levels of government. Moreover, the creation of the new agency may incur high administrative costs, as well as inadequately represent local needs, and struggle to meet urgent planning and implementation demands. One drawback of the built-in-end-date option is that, as the recovery transitions to development and the temporary agency's mandate expires, its accumulated capacity, knowledge, and experience may be lost. It will be important to bring in existing technical capacity from other agencies so that institutional knowledge is not lost.

### **Institutional Arrangements for a Lead Agency**

#### **Creation of a new agency to recover from a specific type of disaster: Kenya's National Drought Management Authority<sup>44</sup>**

Kenya set up its National Drought Management Authority (NDMA) in 2011, later transforming it into a statutory body under the NDMA Act, 2016. Prior to this, droughts have been managed through a series of time-bound projects. Given the ever-present threat of droughts in Kenya, the government decided that a permanent institution would improve the country's readiness to respond.

An independent evaluation of the drought mitigation activities implemented in 2016-17 appeared to validate this decision. It found significant improvements in the quality of response since the previous major drought of 2008-11. The activities were judged to be more imaginative, better coordinated, and faster: half of affected counties took action during the alert drought stage, twice as many as in 2008-11; only seven percent delayed their response until the emergency stage, compared with 34 percent in 2008-11.<sup>45</sup>

*Box 10: Institutional Arrangements for a Lead Agency*

3. **Hybrid arrangement.** A third option increasingly used by governments is a hybrid institutional model. Under this arrangement, an existing government structure is

<sup>44</sup> Source: <http://www.ndma.go.ke/>

<sup>45</sup> The drought cycle used in Kenya has five phases: normal, alert, alarm, emergency and recovery.

strengthened through the creation of a single unit, section or department dedicated to the recovery. The unit will provide overarching central guidance, and support services to keep the reconstruction program on its planned course. The hybrid option ensures relatively quick delivery of reconstruction deliverables and meeting targets. This single unit, section or department dedicated to the recovery will be the single point of coordination of national and international stakeholders. It will be responsible for ensuring the inclusion of line ministries, local authorities, the private sector, and civil society in all phases of the recovery. It will work with local governments and NGOs to delegate implementation responsibilities. It does not plan or implement individual recovery projects or programs.

**Hybrid arrangement: The Interim Haiti Recovery Commission (IHRC)<sup>46</sup>**

Following the earthquake of January 2010, there was no agency within the government with the mandate to lead disaster recovery and reconstruction, which led both to the idea that such an agency should exist, and that, until its establishment, an interim body was needed. The Interim Haiti Recovery Commission (IHRC) was launched and co-chaired by Prime Minister Bellerive and UN Special Envoy Clinton, with the hope of aiding the mobilization of financial and technical resources as well as facilitating coordination between international partners and the Government of Haiti. With a mandate of 18 months, it was not intended to be a funding body or an operational agency, but more of a high-level forum for donor coordination, recovery planning, resource mobilization, and monitoring and evaluation. The Haiti Reconstruction Fund was initially designed to complement the IHRC, but with a longer lifespan and mission. Similar to IHRC, it was governed in partnership between the government and the international community. After the IHRC's mandate expired, the anticipated recovery agency was never created and the IHRC's responsibilities were taken over by regular agencies within the Government.

*Box 11: Hybrid arrangement: The Interim Haiti Recovery Commission (IHRC)*

### Mandates and Operational Modalities Must Be Clear to Ensure Fair Resource Allocation

National agencies tasked with responding to and supporting recovery from a disaster event are essential. There are two distinct types of agencies to consider when selecting a lead agency: the ***planning-agency-led model*** (option 1 above) and the ***recovery-led-agency model*** (option 2 above). The table below provides an overview of their strengths and weaknesses.

<sup>46</sup> Source: Haiti Earthquake 2010 - Recovery from a Mega Disaster: Recovery Framework Case Study, GFDRR, August 2014

Model	Strengths	Weaknesses
<b>Recovery Agency-Led Model</b>	<ul style="list-style-type: none"> <li>• Dedicated mechanisms to implement reconstruction</li> <li>• Has the mandate to implement reconstruction</li> <li>• Should have the capacity to address the scope and magnitude of work required</li> <li>• Does not have a “business as usual” approach</li> </ul>	<ul style="list-style-type: none"> <li>• May have insufficient knowledge of long-term development goals</li> <li>• Time and cost of establishing a new institution</li> <li>• Potential friction with existing agencies</li> </ul>
<b>Planning Agency-Led Model</b>	<ul style="list-style-type: none"> <li>• Has knowledge of planning objectives</li> <li>• Has knowledge of approval procedures for planning initiatives</li> <li>• May have coordination mechanisms to assist with reconstruction</li> </ul>	<ul style="list-style-type: none"> <li>• Institutional inertia can prevent reconstruction from being implemented urgently</li> <li>• May lack the capacity and institutional mechanisms to address reconstruction needs with speed and flexibility</li> </ul>

Table 2: Strengths and Weaknesses of Recovery Agency and Planning Agency Models

Depending on what type of agency is established or confirmed, special mechanisms for allocating resources to reconstruction (including human resources) may need to be established by the lead agency. It is recommended that these mechanisms have already been designed and tested before the disaster strikes to ensure efficiency when they are triggered post-disaster. These mechanisms must ensure fair distribution of resources to protect against discrimination or inequities. For example, for time-bound mandates, employment contracts should include a clear end date so that the designated institution cannot live beyond its reconstruction mandate.<sup>47</sup>

**When establishing new agencies to lead recovery, governments should ensure checks on potential unilateral actions by the lead agency.** Developing appropriate and effective checks lead agency unilateral actions can be achieved through early and continuous involvement by sector ministries and departments, regional and local governments, NGOs, community members, and private sector partners. Together, they can set the overall strategic principles and the design parameters and standards for development and implementation of local reconstruction plans.<sup>48</sup>

### **Set Clear Guidelines and Milestones for Transitioning from Disaster Recovery and Reconstruction to Post-Disaster Development**

Clear and specific guidelines must be written into the legal mandate of a recovery agency to support its transition out of the overall recovery effort in the post-disaster phase. Doing so may require a clear transitional strategy and sunset clauses triggered by pre-determined milestones,

<sup>47</sup> In Pakistan, the Earthquake Reconstruction and Rehabilitation Authority (ERRA) was established as a time-bound central authority under the Prime Minister’s Secretariat. Pakistan Case Study, DRF guide, vol. 2, World Bank, Washington, DC, forthcoming

<sup>48</sup> For details, refer to section on Monitoring and Evaluation.

institutional design, or both.<sup>49</sup> A pre-determined milestone could mean the achievement of a major recovery target set by a national government. Otherwise, the institution or agency in question may be authorized to provide only the initial impetus for the recovery. After that point, other state or subnational institutions, such as relevant line ministries, would take over.

### **Legislate to Clarify Roles and Responsibilities and Establish an Operational Framework**

Legislation should clearly codify functions and authorities of the implementing institution(s) (including the scope of the agency's rulemaking authority, if any), clarify funding mechanism(s), and establish an end-date or sunset clause for the institution.<sup>50</sup>

Pre- and post-disaster legislation should include specifications on which agency will reconstruct which asset, thus setting the basis for organizing recovery institutions and implementing programs. Experience shows that recovery can stumble if there is legislative confusion over institutional ownership and responsibility. Confusion can lead to duplications, failure to identify critical gaps and institutional friction among line ministries, development agencies, reconstruction authorities, and nongovernmental implementing agencies.

Early involvement of the agencies that are to inherit responsibility for reconstructed assets will facilitate effective and efficient recovery by ensuring that operations and maintenance will be handled. Examples include service providers such as energy, transport, health, education providers, or policies that have been introduced by a development agency with the intention of subsequently transferring them to local or central government.

### **Cross-Jurisdictional Assets Should Be Kept in Mind**

Assets that cut across local governments' jurisdictional boundaries are additional areas for which clear understanding of roles and responsibilities will assist recovery. Examples of such assets are highways, water, and irrigation systems. During recovery, economic and livelihood policies instituted by the central government but implemented by lower tiers of government and civil society require dialogue and coordination among the different partners. Advance legal clarity before a disaster strikes on the degree of policy and implementation authority at each level of national and local government helps avoid friction among levels of government.

### **Clear Legal Policies on Private Assets Simplify Recovery Process**

Disasters can heavily impact privately owned assets such as houses and businesses. To enable the lead institution(s) to act effectively, legal clarification on the recovery of private sector assets should be done before a disaster strikes and reviewed and agreed upon after a disaster strikes.

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<sup>49</sup> Because no cross-sectoral recovery framework was developed in Haiti in 2010, no schedule of recovery activities was defined within or across sectors, leading to uncertainty regarding the completion of recovery activities.

<sup>50</sup> See Indonesia, Pakistan, and Yemen case studies, DRF guide, vol. 2, World Bank, Washington, DC, forthcoming.

Issues for consideration include the responsibility that recovery institution(s) may have to repair or replace private sector assets. The housing sector experiences many of these issues.

### **Public Sector Facilitation of Private Sector Recovery in New Zealand<sup>51</sup>**

The Central Christchurch Development Unit was a unit within the Canterbury Earthquake Recovery Authority, created in 2012 in response to the Canterbury Earthquakes, New Zealand. With more than 80% of the central city infrastructure being damaged or destroyed, its role was to lead the rebuild of Christchurch central and to deliver the vision formulated in the Central City Plan prepared by the Christchurch City Council for a distinctive, vibrant and green 21st century city. A significant part of this role was to facilitate private sector recovery in the Central City. This included encouraging and supporting investors to invest in the Central City and allowed landowners to rebuild. Encouragement was generated by the introduction of “anchor projects” funded by the Government such as the construction of a central city library, a major sporting facility, transport networks, community housing, and a convention centre. The prospect of such “anchor projects” facilitated the decisions of private sector to invest in the central city with the promise of an engaging market and new business opportunities. In addition, an amendment of land-use planning provisions was passed to encourage businesses and community to come back into the central city. The facilitation of the private sector recovery by the Central Christchurch Development Unit was a collaborative process associating the Christchurch City Council in consultation with key landowners, banks, insurers, investors and the Christchurch community to achieve this goal.

*Box 12: Public Sector Facilitation of Private Sector Recovery in New Zealand*

## **Creating a Legal Mandate for Post-Disaster Land Use Planning**

Land-use and land-use planning can be an important aspect of post-disaster recovery and reconstruction, especially for disasters such as earthquakes, hurricanes or heavy floods which can lead to temporary or permanent relocation to new settlements. It is therefore important that governments prepare before a disaster strikes to ensure they have proper legal institutional mandates for land use planning. This mandate can be modified based on the post-disaster needs, but a clear pre-disaster mandate and framework will facilitate a revision, if needed, after the disaster. . Three effective options exist to create a legal mandate for improvised or new institutional arrangements for post-disaster strategic land use and physical planning. These are by:

1. Amending existing legislation
2. Introducing new legislation
3. Creating a mandate through ordinances and government orders (regulation).

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<sup>51</sup> Source: <http://www.eqrecoverylearning.org/environments/economic/resource/7109>

## **Appoint an Effective Recovery Leader and Team**

A recovery institution is empowered through both a clear mandate and the appointment of an experienced and informed leader to manage it and enough technical capacity to support it.

The importance of politically respected, competent, and empathetic leadership is crucial to ensure political and community ownership and recovery financing. Some characters of an effective leader are noted below:

- An effective leader must be committed to the recovery process, have strong team-building skills, and the capacity to reach out to affected people.
- An effective leader can ensure good recovery practices, including Building Back Better (BBB) and managing the expectations of the affected populations.
- An effective leader can ensure risk reduction initiatives are intricated into the recovery process.
- An effective leader can raise necessary resources from different sources.
- An effective leader can overcome institutional barriers.

### **Recovery Leadership in Serbia**

The 2014 floods in Serbia were a large-scale disaster in the country's history. National government appointed a recovery leader from a civil society background, who was neutral, well reputed and beyond intergovernmental bureaucracy and politics. Under his leadership, flood recovery was managed transparently. Government officers were prosecuted for corruption and mishandling of recovery funds. Recovery funds were managed by FARO and disbursed to local government.<sup>52</sup>

*Box 13: Example of Recovery Leadership in Serbia*

However, strong leadership can also introduce a top-down model of recovery, which is not consultative enough. The strength and composition of the recovery team (or the staffing) are as important as having a charismatic leader.

## **Staffing for Recovery**

Staffing for recovery may be a challenge based on the nature and scope of the disaster. Governments may need additional expertise to respond to sectorial recovery needs, for instance if an epidemic arises as a result of a disaster. They may also need to scale up their staff number temporarily or in a longer-term. Although it is recommended to anticipate capacity needs before a disaster occurs, it is necessary to reassess the capacity after a disaster, via a rapid capacity needs assessment. This will allow the government to assign the roles and responsibilities to the different stakeholders in place and to get a clear understanding of the capacities and limitations of the

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<sup>52</sup> LDRF Serbia Case Study, 2017

institutions and organizations involved. Such assessment may also inform the designation of the lead agency/ies and the functions to be assigned to line ministries and agencies, as well as to subnational entities. This assessment should also cover the private sector, civil society organizations, and associations of professionals, and NGOs in order to identify which of these should be involved and in which type of activities. Finally, this assessment may help to prepare a capacity strengthening strategy to improve the performance of all the implementing agents.

If the government is unable to meet the increased professional and technical requirements for recovery in both the short and longer terms, it's possible to solicit expertise from elsewhere to give direction to programmatic activities. It is critical that t staffing procedures will be written into the institutional framework for recovery.

### Immediate-Term Human Resource Needs

Human resource professional, administrative, and specialist skills can be strengthened through targeted employment policies. As noted above, sometimes a new lead agency is formed. Other times, an existing institution is made responsible for recovery. In both cases, human resource capacity almost invariably needs to be strengthened by adding new personnel, often with specialized skills. One option is to draw expertise from other sources such as line departments, humanitarian response agencies, the domestic and international private sectors, civil society, and international agencies. Reporting lines can be transferred to the lead agency by secondments and other special arrangements (even if temporary). This can delay other business-as-usual initiatives however such delays are likely to occur with priorities focused on disaster recovery objectives.

Significant benefits arise from forming recovery teams that are well connected to the wide variety of recovery stakeholders. By recruiting experts from domestic and international agencies or experienced NGO, the lead agency can bring global good practices to its recovery effort. As part of disaster response, the United States has established surge-staffing procedures, which outline the short-term staff procurement procedures for affected departments.

### Long-Term Human Resource Requirements

Long-term staffing should include input from expected successor agencies identified ideally in the Disaster Recovery Framework. Increasing the number of professional and technical experts to support recovery efforts is not sustainable beyond the initial years of post-disaster recovery. To facilitate the eventual handover of the recovery portfolio to the development agencies,<sup>53</sup> the lead agency can recruit liaison officers and transition teams from these agencies early in the planning stage. These individuals can then participate from the beginning as planning partners of the recovery. Combining short-term and longer-term human resource needs can also alert the lead agency to the capacities and requirements of the line ministries.

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<sup>53</sup> Typically, line ministries and development agencies.

## **Clarify the Roles of International Agencies and Development Partners**

When appointing the lead agency, the government must ensure that it has the ability and capacity to coordinate with partners and international agencies. This coordination is particularly necessary when the latter are major donors and interested in being implementing partners in the recovery and reconstruction effort.

International agencies are usually quick to offer assistance after a disaster. However, their funding may have requirements and conditions. One requirement common to many donors is that the recipient government must provide evidence of strong financial tracking and reporting mechanisms. It is recommended that governments endow their institutions with strong financial tracking and reporting mechanisms before a disaster strikes, to avoid donor reluctance to provide financial support when funding is needed for the recovery. The disaster may have damaged these aid-tracking mechanisms. Nevertheless, donors have obligations to report back to their own constituents on the appropriate and responsible use of their contributions for disaster recovery. Thus, international organizations may be reluctant to contribute directly to the government's recovery budget. Instead, the donors may choose to manage their own recovery funding alongside the national system.<sup>54</sup>

Creating joint ownership of the government-led recovery process among international partners enables them to become familiar with the specific complexities of the context. Joint ownership also can encourage partners to make long-term commitments to projects that they have pledged to fund and implement. However, partners' long-term involvement must be balanced with the need to ensure that the lead agency does not cede *control* of the recovery program to international agencies and development partners.

By clarifying from the outset, the role of international agencies and development partners, the government can identify avenues for their participation in the recovery. The government then can establish clear guidelines on their roles, responsibilities, and mandates.

### **Module 4 Checklist**

This checklist covers the different steps required to create effective institutional arrangements for recovery. The list provides an overview of the primary steps to be followed.

#### **National Planning Agency**

- ✓ Decide on appropriate institutional arrangements.
- ✓ Provide legal mandate for recovery which clarifies institutional roles and responsibilities.
- ✓ Designate lead recovery agency.
- ✓ Appoint an effective recovery leader.

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<sup>54</sup> See section on Financing for Recovery.

**Lead Recovery Agency**

- ✓ Ensure continuity between humanitarian and recovery work.
- ✓ Clarify role of international organizations and development partners.
- ✓ Coordinate recovery efforts across sectors with multiple stakeholders.
- ✓ Identify and ensure that appropriate human resources are available throughout the recovery.

## MODULE 5. FINANCIAL MECHANISMS

In post-disaster recovery, there are five major financing challenges that policy-makers face:

1. To quickly quantify the economic costs of the disaster
2. To develop recovery budgets
3. To identify the sources of financing as well as financing gaps
4. To coordinate and allocate financial resources
5. To set up the mechanisms to manage and track funds.

Good financial practice across post-disaster experience shares the common characteristics of rapid disbursement, coordination of resources, and flexible sources of funding. It is important that governments prepare before a disaster strikes, as these financial practices can be complex to set up. They need to be carefully designed. It is necessary to have a rapid disbursement system adapted to post-disaster recovery needs that has been tested before a disaster to avoid the risks of corruption and fraud that can be linked to rapid disbursement.

Figure 11 illustrates the key elements of post-disaster recovery financing covered in the DRF guide, incorporating mechanisms for both national and international resources.

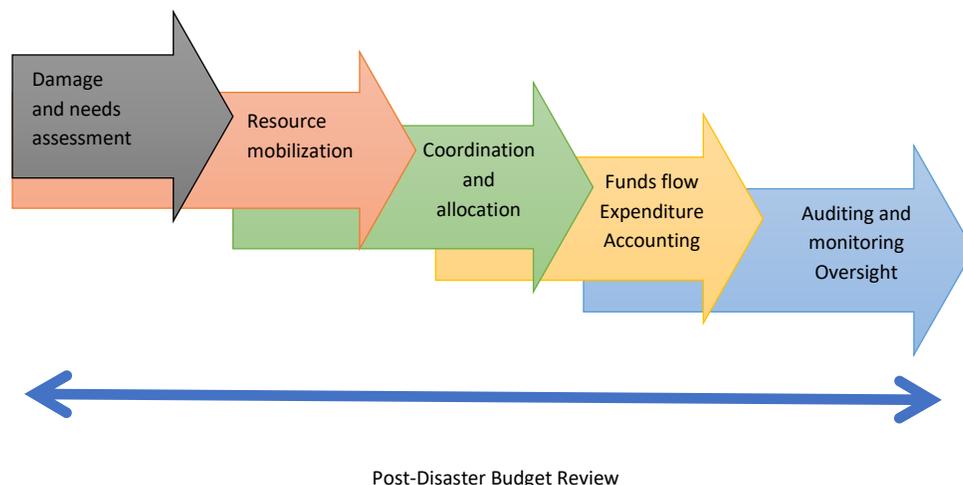


Figure 11: Key elements of post-disaster recovery financing

### Quickly Quantify the Economic Costs of the Disaster

#### Post-Disaster Assessments are the Basis for Resource Mobilization

During an assessment process after a disaster, the damages to physical assets are valued, first, in physical terms (number, extension of area or surface, as applicable). Second, damages are assigned monetary value, expressed as the replacement costs, according to the market prices prevailing just before and after the disaster. These costs are the baseline cost. The reason is that the calculation of

recovery costs would have to account for additional costs. They are post-disaster price alterations, improvements associated with risk reduction, and the concept of build back better introduced by the recovery framework. Additional economic losses calculated refer to changes in economic flows arising from the disaster. Changes in flows continue until the achievement of full economic recovery, in some cases requiring several years, up to a decade or more.<sup>55</sup>

## **Develop Post-Disaster Recovery Budgets**

### **Disasters Impact Public Finance**

When reviewing their post-disaster budget, governments should consider that disasters force reallocation of tight government budgets and a search for supplementary revenue. At the same time, disasters can reduce government revenue by disrupting economic activity. Effects include lowering productivity, increasing inflation, reducing purchasing power, and possibly lowering trade or imports and exports. All of these effects impact direct and indirect tax revenues.

### **Ongoing Post-Disaster Budget Review**

The initial budget review should focus on channelling urgent resources for the humanitarian and relief efforts. A pre-disaster identification of urgent resources and funding actors that are typically available after a disaster strikes are needed to facilitate such identification and mobilization once the disaster strikes. Subsequent reviews can be based on the recommendations of the post-disaster needs assessments. These findings involve detailed sequencing, prioritizing, and financing and implementing the recovery and reconstruction process. Even during the disaster recovery framework implementation phase, the lead agency needs to analyse the budgets for variances from actual performance.

### **Private Funds Gap Analysis**

There are two main challenges to post-disaster budgeting. The first one is to capture the overlap between public and private financing. Reconstruction of public goods can be financed by public or private funds and the inverse is true as well (example of the housing sector). Private assets are almost always reconstructed by private finance (except for housing; see tourism industry for instance, to reconstruct the hotels). Rails, hospitals, housing, hotels and restaurants are common examples of public and private financing overlaps. Figure 12 highlights the sectors in which overlap exists. The second challenge is to allocate public resources for key private goods. Housing is one example. Disaster-affected people may not have the resources necessary to rebuild, which is critical for restoring normalcy, and there may be a gap in private funds.

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<sup>55</sup> For details on how to conduct a PDNA or similar assessment, see Post-Disaster Needs Assessment Guide, vol. A, EU/UN/WB, 2013.

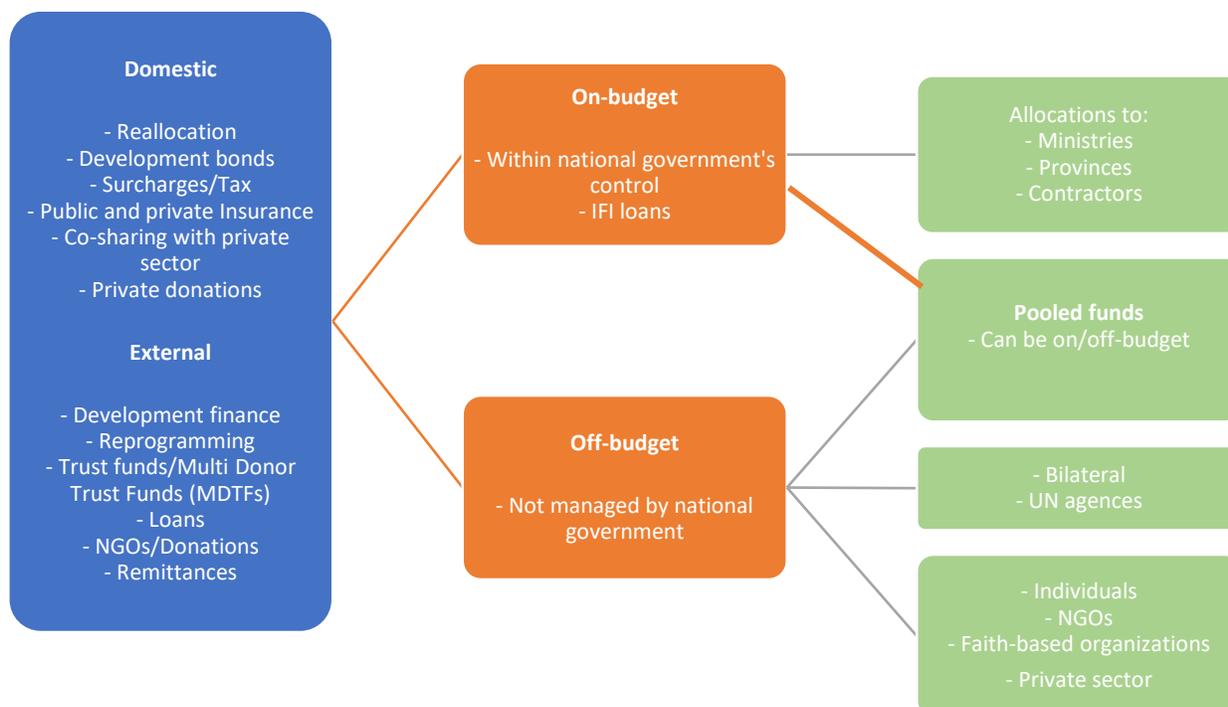
	<b>Public goods</b>	<b>Private goods</b>
Public finance	Roads Schools Rail	Housing Livelihoods
<b>Public/Private partnership</b>	Hospitals	
Private finance	Hospitals Schools	Hotels and restaurants Housing

*Table 3: Overlap Between Public and Private Funding*

## **Identify and Mobilize sources of Financing**

### Identify sources of financing

Financial considerations of recovery start with budgeting within the pre-disaster and macroeconomic context. Depending on the scale of the disaster and the capacity of a national economy, the government may either rely largely on national resources, or appeal to external sources for funding. The latter option is useful particularly when the government already has cooperation agreements with donors and/or multilateral agencies. Figure 13 details the elements of recovery financing from the variety of funding source possibilities—both domestic and external. The lead agency should ensure that all of these funds are allocated in accordance with the national recovery priorities, whether or not the funds are channelled on or off the national budgetary system.



*Figure 12: Global View of Post-Disaster Financing*

The challenge of post-disaster recovery is to mobilize additional resources. To the extent possible, recovery should not be at the expense of normal, ongoing development processes. Depending on the nature and scale of the disaster, recovery funding can come from domestic or external resources.

## Domestic Funding

Domestic resources generated by disaster-affected governments are:

- Reallocation among the budget items from “less” to “more” disaster-hit sectors. It is important that governments have adopted a legal framework on reallocation possibilities before a disaster strikes, to allow for flexible reallocation when a disaster strikes.
- Issuing sovereign reconstruction or development bonds.
- Levying tax or surcharge for recovery.
- Introducing policy incentives for the private sector to share recovery costs.
- Voluntary civil society and private philanthropies’ contributions.
- Insurance.

Most importantly, a huge amount of recovery is supported by the people themselves. The public sector’s share in recovery can vary widely. It depends on the nature and scale of disaster damage and relative balance of public and private sector asset ownership in the affected areas. In most cases, the biggest contribution to recovery financing comes from the citizens within the country

and abroad. These sources of funding, among them remittances, are becoming increasingly important in recovery programmes.

### **The National Insurance Trust Fund (NITF) in Sri Lanka**

Given the recurrence of disasters in Sri Lanka, the government took a decision to put in place financing instruments for risk sharing and risk transfer to minimize overall economic losses due to disasters. The National Natural Disaster Insurance Policy (NNDI) under the National Insurance Trust Fund (NITF) was first used in the floods and landslides 2016 and then in the 2017. It was operationalized in 2016 by the Ministry of Finance in collaboration with the National Disaster Relief Services Centre (NDRSC), which is a department under the Ministry of Disaster Management. This state-backed National Natural Disaster Insurance Policy covers all “natural” disasters except drought since damage from drought is expected to be offset under the Crop Insurance scheme. The NNDI is an entirely state-funded insurance scheme where the total costs of the annual premium are borne by the state. The insurance covers all households irrespective of their income status. The Government pays the annual premium payable under the NNDI policy which was about USD 2 million (LKR 300 million) in 2016 and around USD 3.3 million (LKR 500 million) in 2017. The policy coverage totals up to USD 65 million per annum. Up to USD 10 million of this amount is allocated for emergency relief while the balance is for the structural damages and assets replacement in the affected households and small and medium sized enterprises (SMEs). In 2017, total insurance payments amounted to USD 96.7 million (LKR 15 billion) LKR out of which USD 16.5 million (LKR 2.5 billion) was for immediate relief.

### **Surcharges and taxes in Ecuador, 2016<sup>56</sup>**

On 16 April 2016, an earthquake of 7.8 Magnitude hit the northern coastal provinces of Ecuador, affecting nearly 90 thousand persons, including 663 casualties and 80 thousand displaced. Widespread damage was caused throughout 2 provinces, including the urban areas of several small to intermediate cities. A post-earthquake needs assessment conducted under the leadership of the Government of Ecuador through the Planning Office, SENPLADES, with the support of the UN and the WB estimated recovery needs for a total amount of USD 3.344 MM. With the social sector, mainly housing, representing the 41% of the total needs, followed by the Productive Sector with 31% of the needs and the Infrastructure sector with the 26% of the total needs.

The Government of Ecuador, GoE, immediately informed of its capacity to finance the recovery via four main instances: 1) Contingent loans with the IFIs including the WB, the IADB and the Andean Development Bank for a total amount of USD 660 M, 2) A contribution from the IMF

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<sup>56</sup> Reference: Reconstruyo Ecuador, Plan de Reconstrucción y Reactivación Productiva post terremoto, Mayo 2017, Gobierno del Ecuador

of USD 400 M, 3) General Budget with USD 193 M, and 4) A so called “Solidarity Act” that would seek direct contribution of the population at large.

The Solidarity Act contributions were applied in different contexts to the general income, revenue and capital of individuals and enterprises. Ten key initiatives included several options, for example a contribution of the equivalent of a one-day salary for 6 months of public servants, tax benefits and exemptions to attract new investments in the affected provinces, and a 3% contribution of the total amount of the revenues declared by the firms in 2015.

In particular, a 2% increment of the Value-Added Tax, increasing from 12% to 14% within a timeframe of one year in the entire country, except in the directly affected provinces was particularly relevant and made a significant contribution to the entire fund. By May 2017 which was the last month of collection of this tax, a total of USD 1.5 billion had been pulled together.

This type of mechanism was well received by the population as it offered all an opportunity to directly contribute to the recovery fund, for the most affected, thus enhancing the sense of unity and solidarity of the people. In addition, the broad base of contributors allowed for a small increment with a high impact in the revenue.

*Box 14: Examples of Domestic Funding for Recovery*

Domestic sources of funding for recovery and reconstruction are becoming increasingly important. It is also useful to suggest an earmarked funding facility within the government for recovery and reconstruction, on the similar lines as response. For smaller disasters, national sources need to be tapped, but for large-scale disasters, it’s important to leverage international sources of funding.

### External/International Sources of Funding

External resources for post-disaster recovery can be sourced from multilateral development banks, regional development banks, bilateral development partners, international NGOs, private philanthropies and charities, fundraising campaigns. Frequent methods used to access external or international funds are international appeals and donor conferences among others

**International Appeals.** National, regional, and international relief systems are able to mobilize and respond to large-scale disasters that require a system-wide response to humanitarian crises by launching appeals. A renewed appeal is usually launched after the first appeal that covers recovery needs in detail.

**Donor Conferences.** An international donors’ conference may be organized as soon as possible by the government or international community, preferably within the first three months following a large-scale disaster or complex emergency. Holding a donor conference is an effective and coherent way of communicating recovery damages, losses, needs and presenting the disaster recovery framework or strategy. By providing this information—including a demonstration of how the recovery might unfold and activities prioritized—this should be an opportunity to source funding for the post-disaster activities from donor governments. Donors commit resources for

humanitarian needs as well as long-term recovery and reconstruction in keeping with their own strategic priorities.

**International Financial Institutions.** International financial institutions (IFIs), such as the World Bank and regional development banks (including the Inter-American Development Bank and the Asian Development Bank), increasingly have been engaged in providing lending and non-lending services to developing countries for post-disaster recovery. The financial assistance, generally provided as soft loans, is used to rebuild physical assets, including private housing. Non-lending assistance from IFIs includes damage and loss assessments, acting in an advisory role, and other forms of technical assistance. Loans and assistance can be obtained not only after a disaster strikes but also before to focus on preparation and rapid response capacity. Joint assessments have become an important mechanism for engaging with other donors and ensuring that borrower needs are met without overlaps. In almost all major disasters in the recent past, IFIs have been one of the most important sources of financial assistance for recovery.<sup>57</sup>

**Flexible Funding Sources.** In post-disaster environments, conditions change so rapidly that unexpected delays may occur if budgeting revisions have to wait until the normal budget cycle. The government may have established a contingency fund to respond to the immediacy of a disaster. Such funds are characterized by flexibility to respond appropriately, especially in the immediate aftermath of the disaster. Pooled funds from donors that are administered by a trustee are also characterized by their flexibility to finance recovery needs that may be unattractive to the bilateral donors or do not fit within the government's budget.

**Allocate and Coordinate Financial Resources.** Experience has shown that if governments do not establish an extensive financial framework for the recovery in the short, medium and long terms, only short-term interventions tend to have enough funding for implementation. Yet, medium and long-term recovery programs are equally important for sustainable recovery. This is why governments should ensure that they establish a complete financial framework with predictable and multiannual funding that is aligned with the sectorial recovery programs. Otherwise, there is the risk that funds for urgent and short-term interventions are allocated in the peak of the post-disaster situation but that the commitments for subsequent years will not be secured. Managing the inflows of resources and spending them effectively is challenging in a post-disaster environment. The actual allocation of resources occurs through a budgetary process. Figure 5.4 highlights the different timeframes for resource allocation. Typically, reconstruction expenditures will be heavy in the medium to long terms as destroyed or damaged infrastructure is replaced.

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<sup>57</sup> [http://sheltercentre.org/sites/default/files/transitional\\_settlement\\_and\\_reconstruction\\_after\\_natural\\_disasters\\_0.pdf](http://sheltercentre.org/sites/default/files/transitional_settlement_and_reconstruction_after_natural_disasters_0.pdf).

<b>Post-Disaster Financing</b>	<b>Short-term</b>			<b>Medium-term</b>			<b>Long-term</b>		
Contingency budget	■	■	■	■	■	■			
Donor assistance (relief)		■	■	■	■	■			
Reallocation of annual budget			■	■	■	■	■		
External loans					■	■	■	■	■
Capital budget realignment							■	■	■
Donor assistance (recovery)							■	■	■
Tax increase								■	■

Source: Adapted from ASEAN, “Advancing Disaster Risk Financing and Insurance in ASEAN Member States: Framework and Options for Implementation,” Association of Southeast Asian Nations, Jakarta, 2012.

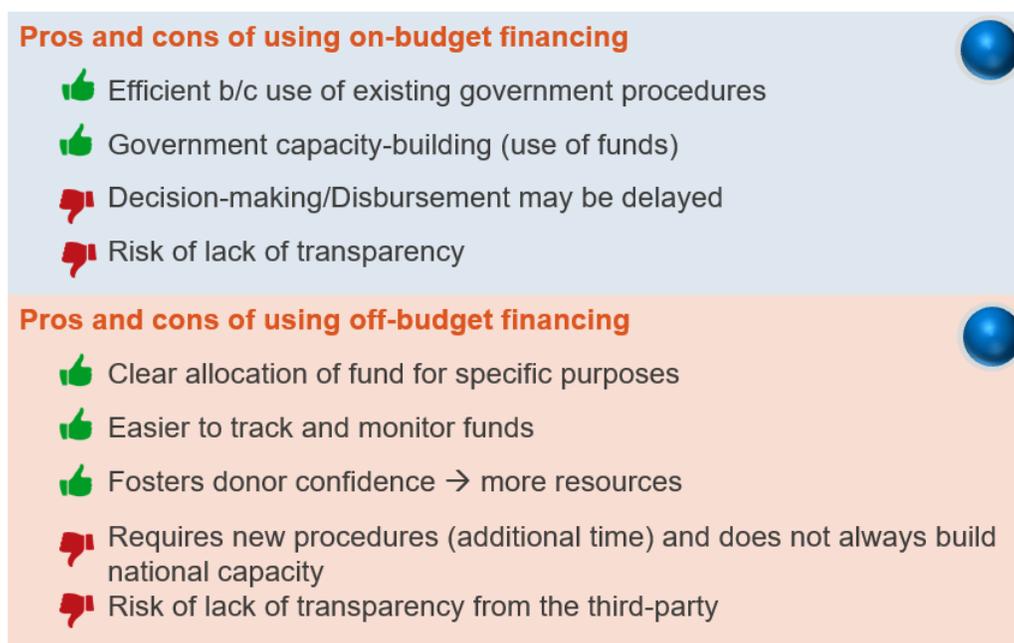
*Table 4: Timeframe for Use of Allocated Resources*

Funds from the private sector and NGOs outside the government budget are critical to recovery as in many instances, government funding is not sufficient. The programmatic approach can help coordinate funding sources, ensure communication among different sources of funds, and ensure that monies spent do not duplicate efforts. For example, private sector funds may be allocated to a specific sector or area and funds coming from nongovernmental organizations could be allocated to social needs.

### Public Financial Management Systems

An important step toward fulfilling recovery objectives is setting up financial systems that allocate and disburse funds from one level of government to another and/or communities or systems that manage external resources. In large-scale disasters, external resource flows usually are significant. Therefore, recovery financing will likely be managed through both the government’s budget (on-budget) and off budget funding. The financing systems should be set up to respect transparency, accountability and integrity, in particular to control the risks of corruption.

Whether a share of external resources is channelled through the government’s budget systems is likely to depend on many factors. The table below provides an overview of the pros and cons of mobilizing on and off budget, taking into consideration that typically, recovery financing includes both and that they can complement each other:



*Figure 13: Pros and Cons of using on-budget and off-budget financing*

To maximize the impact of domestic and external resources, the international community increasingly has advocated the use of budget systems and other public financial management (PFM) systems. The same principles of aid effectiveness apply in a recovery context. The key to PFM arrangements is government and donor flexibility. The reason is that, even though core fiduciary principles apply, recovery financing has proven to be fundamentally different from the implementation of regular development financing. Given the need for rapid response after a disaster strikes, it is important that governments work on strengthening their national PFM before a disaster strikes.

Efforts to support and strengthen the national PFM system may take into consideration the following:

- Capacity of institutions and budget systems,
- Scale of international aid and coordination of aid
- Scale of aid on-budget vs. off-budget prior to the disaster
- Number of institutional levels involved in PFM cycle
- Financial arrangements for emergency relief and long-term recovery
- Nature of emergency procedures and implementation arrangements (including procurement and logistics)
- Fiduciary integrity and anticorruption.

## **Multi-Donor Trust Funds**

In many countries affected by large-scale disasters, Multi-Donor Trust Funds (MDTFs) have been set up to channel donor resources in a coordinated way and in accordance with national priorities. The MDTF provides a convenient way of pooling donor resources and avoids setting up multiple bank accounts and programs. They are aligned with the principles of donor harmonization and country leadership and they provide un-earmarked resources that can address the gaps in recovery financing. Finally, they provide a forum for donor coordination as well as dialogue between the international community and the national government on issues of recovery policy and programming.

Expenditures from the MDTFs are initiated, planned, and implemented primarily by governments. Allocations of the funds are endorsed by a steering committee with government, donor, and civil society membership. The role of the fund's trustee is to ensure that monies are disbursed, accounted for, and spent in accordance with objectives, measurable outputs, and transparent procedures. The trust fund earns interest as it awaits disbursement. The Asian Development Bank (ADB), United Nations Development Programme (UNDP), and World Bank have acted as both trustee and administrator of such pooled funds. This process can reduce fragmentation of aid by creating a forum for policy dialogue and aid coordination between donors and the government.

**Rapid Disbursement.** Meeting the recovery objectives demands quick response. Actions must occur under significant time pressures and must be completed within the set timeframes.<sup>58</sup> Compared to normal projects, the necessity for speed mandates short timelines for project preparation, approval, and procurement. Special dispensations or accelerated processes may be applied to disburse the funds available for recovery as quickly (yet transparently) as possible.

**Coordination of Resources.** Often, numerous government and nongovernmental actors engage in the recovery efforts. Their number poses significant coordination challenges for the lead agency. Having a variety of stakeholders and donors contributing to the same objectives requires the use of different types of coordination mechanisms to marry policy to funding and implementation. A range of such mechanisms is especially necessary when many funds will be managed not by the government (on-budget) but by the funding sources (off-budget).

## **Set up the mechanisms to manage and track funds**

### **Auditing and Monitoring, Oversight**

The monitoring system that is most appropriate depends on the magnitude of the disaster, number of actors engaged in recovery spending, quality of their reporting, and existing capacity of the national agency responsible for it. An important aspect of fund tracking is to identify where there

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<sup>58</sup> See World Bank, "One Year after the Java Earthquake and Tsunami: Reconstruction Achievements and the Results of the Java Reconstruction Fund," Jakarta, 2007, 52.

are surpluses and deficits of financing. These gaps or excesses can be sectoral as well as geographical. Key benchmarks for the financial monitoring and evaluation system are the production of timely and comprehensive estimates of:

- Funds allocated and spent covering all sources: domestic, international, public, and private
- Recovery progress
- Economic and social impacts.

It is recommended that governments design and test ahead of a disaster some monitoring and evaluation systems that can be mobilized quickly by the relevant institutions and stakeholders in charge of implementing the post-disaster recovery. This will allow governments to decide on the best monitoring system to use once the disaster strikes.

Auditing and monitoring oversight is designed at three levels. At the highest level is the overall recovery program monitoring. Program-level monitoring builds on sector-level monitoring, which consolidates the reporting of each sector. At the lowest level is the individual project monitoring. The auditing and monitoring system should be designed to integrate oversight at all three levels. Special additional systems may be required to monitor inflows, use, and impact of recovery financing.

The credibility of the government's recovery budget is based on delivering the resources promised for recovery and using them for their intended purposes within a set timeframe. The accountability of the recovery plan to the affected population and to the financing sources is critical. Often, as part of the accountability process, it is beneficial for the government to have an independent third-party auditor.

Both internal and external audits are required because each serves a different purpose. In general, the scope of an external audit is much more defined with a set end. External audits typically focus on the accuracy of historical financial statements, or focus after the fact on a distinct event and ask the question, "What, if anything, went wrong in managing recovery expenditures?" The scope of an internal audit is broader and more open-ended<sup>59</sup>—they focus on an ongoing process and assess risks and controls to answer the question, "What could go wrong in managing recovery financing at various levels?" External auditing organizations, such as accounting firms, can also perform an audit of an organization's internal control over financial reporting and identify gaps between observed processes and controls and standards adopted by international bodies for acceptable internal controls. In selecting an external auditor, care must be paid both by the government and the external auditor to ensure that the selected auditor is "independent" from the government and does not have any interests that would prevent the auditor from exercising objective judgment.

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<sup>59</sup> M. Locatelli, "Good Internal Control and Auditor Independence," *The CPA Journal*, 2002.

A government must ensure that resources are spent for their intended purposes. It must also ensure that sufficient resources are allocated to the sectors and projects in need, and that the amount of financing distributed is proportionate to the needs of recipient sectors or projects.

Contributors to the recovery financing likely will require assurance that resources are allocated efficiently, and that specific sectors and subsectors are fully financed. Therefore, tracking recovery aid is very important. Aid tracking is complex because of the various sources of funding as well as various channels through which funds are allocated. However, it is critical to set up a tracking system very early to ensure that funds are spent for the intended purposes. The tracking system should capture aid flows at the individual sector level as well as project level. An effective aid tracking system should incorporate tracking multiple streams of funding, including public sources, donor funds (on and off budget), private sector contributions, and NGO sources.

### **Module 5 Checklist**

This checklist covers finance issues from budget review and resource mobilization to good oversight of fund disbursements. The list covers the key actions to be taken with respect to mobilizing and managing resources.

#### **Ministry of Finance / Lead Recovery Agency**

- ✓ Conduct funding gap analysis and budget review
- ✓ Identify domestic sources of funding
- ✓ Identify external sources of funding
- ✓ Organize international appeal or donor conference to access international funding.
- ✓ Define mechanism to manage inflow of funds. Specifically, financial systems that disburse funds between levels of government, or directly to communities or systems that manage external resources.
- ✓ Coordinate and allocate funds
- ✓ Set up system for aid tracking
- ✓ Strengthen public financial management system
- ✓ Engage independent external third-party auditing services and establish an effective internal audit function

## **MODULE 6. IMPLEMENTATION ARRANGEMENTS**

The recovery policy framework, institutions, and financing are discussed in earlier chapters. However, the issues and options related to them are of little relevance unless recovery programs are implemented quickly, and visibly improve the lives of disaster-affected populations.

### **Adopt Standard Implementation Procedures**

Existing project approval and procurement, reporting, and staffing procedures in the country may need to be simplified to meet the pressing demands of the recovery process. Often recovery projects are stalled due to lengthy bureaucratic procedures for project approval and procurement. Even if fast-track approval processes exist, at times responsible officers are reluctant to use them. The authority given to the lead recovery agency by the government can play a critical role in promoting the use of simplified procedures and processes across all sector and entities for more rapid implementation.

#### **Inclusion of a Grievance Redress Mechanism within Nepal's National Reconstruction Authority**

Nepal's National Reconstruction Authority (NRA) was created in response to 2015 earthquake and aftershocks. The institutional framework for recovery included the set-up of a system of redressing grievances, right from the village to central levels. At the lowest level, there would be a Grievance Redress Officer with each Local Resource Centre. The grievance redressal officer would address the grievances, suggestions and complaints of the communities in the reconstruction process. If the individuals or households would not be satisfied with the orders and decisions at this level, they could appeal to the Grievance Redress Office in the Sub-Regional Office of the NRA. The concerned individuals could also file another appeal before the NRA Central Office. The NRA Act provided for the Appellate Committee, consisting of a Judge nominated by the Government of Nepal from among the sitting judges of the Appellate Courts and two other members appointed by the Government of Nepal. The final appeal would lie with the Appellate Committee, which would try and settle all the appeals. In pursuance of the principles of accountability and transparency, the NRA would conduct a public hearing at least once in six months, draft a public report on reconstruction and expenditure every four months and submit an annual report to the Government of Nepal.

*Box 15: Inclusion of a Grievance Redress Mechanism within Nepal's National Reconstruction Authority*

### **Establish Reconstruction Standards**

In the Module 3, the three key planning principles for disaster recovery were explained in detail. They are:

1. Converting adversity into opportunity
2. Building Back Better (BBB)

### 3. Prioritizing inclusiveness of vulnerable groups

As the recovery moves into the implementation phase, these need to be translated into practical recovery and reconstruction standards. Local stakeholders from both the government and civil society, including NGOs and the private sector, can work together to detail these standards.

#### Reconstruction Standards Can Cover Recovery Sectors and Implementation Mechanisms

Reconstruction standards are specific to the sector and the type of natural disaster. They must be detailed well ahead of actual implementation. It is recommended that governments prepare reconstruction standards before a disaster strikes to be able to apply them quickly and efficiently when needed. For example, after an earthquake, the reconstruction must conform to appropriate seismic safety, quality, technological, and environmental standards. In another example, reconstruction of schools could include the standard that all schools must be rebuilt to function as shelters during a disaster. Reconstruction standards also could ensure that first consideration is given to local resourcing of materials and technical expertise.

Ensuring compliance with reconstruction standards during the implementation phase is key to resilient recovery. To ensure compliance, construction monitoring teams (CMTs) could be established by the lead agency to monitor technical aspects of both the inputs and outputs of reconstruction. An input is defined as a contribution of work or information and an output is defined as the amount of something produced by a person, a machine or industry. In addition to alerting the relevant authorities of any missteps or lack of adherence to standards by the implementers, the lead agency should also support implementation entities to correct their procedures.

#### Develop Procurement Systems Adapted to the Recovery Context

##### Rapid Procurement Systems

Rapid procurement of goods and services can be a crucial element for an efficient and successful recovery. However, procurement in post-disaster settings can be haphazard, leading to gaps in implementation and potential abuse of procedures.<sup>60</sup> Several types of procurement systems will facilitate the purchase of goods and services during recovery. Two are pre-arranged procurement and fast-track procurement. It is recommended that governments have tested and implemented these procurement systems before a disaster strikes so that they can mobilize them properly when needed.

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<sup>60</sup> For the staffing needs, see section entitled “Staffing for Reconstruction.”

## Pre-arranged Procurement

Pre-arranged procurement pre-establishes a list of qualified contractors. This list can be categorized by type of expertise and competencies. Having a prequalifying system in place expedites issuing contracts and evaluating tender responses. A pre-qualifying system also eliminates inexperienced contractors, who can significantly underbid more experienced competition, but who lack the expertise required to successfully implement the reconstruction project.

## Fast-Track Procurement

Fast-tracking procurement means using simplified, agreed tender and purchasing processes to quickly get goods and services to the areas in which they are needed. To further expedite procurement, a single source for the purchase of specific goods and services could be pre-determined.

Fast-tracked procurement systems can be used by both the private sector and NGO entities. To facilitate oversight and monitoring, it is helpful that all stakeholders that procure goods and services share some of the same procedures. As part of the third-party audit mentioned in the transparency section of Module 5, procurement needs to be scrutinized closely.

### **Examples of Fast-Track Procurement**

- **Fast-Track Procurement in Mozambique**

During emergencies, the National Institute for Disaster Management (INGC) in Mozambique is able to suspend duties and taxes placed on the purchase of emergency supplies. After the emergency, the INGC is obligated to reconcile these exemptions with the fiscal authorities.

- **Fast-Track Procurement in Pakistan**

Pakistan was able to streamline its procurements through the services of the engineering profession's statutory body, Pakistan Engineering Council (PEC). PEC set up a pre-arranged system of procurement for emergencies with a pre-approved list of contractors for reconstruction. The list enabled more rapid issuing of contracts, pre-determined standards for evaluating tender responses, and provided logical consistency in responses for why particular firms were awarded reconstruction contracts. In general, this pre-arranged structure ensured transparency at the start of the procurement process.

- **Adding Oversight Mechanisms to Fast-Track Procurement in Laos PDR**

Lao PDR has developed an emergency road repair fast-track financing mechanism to ensure timely facilitation of urgent road infrastructure repairs. The Minister of Finance and 17 provincial governors created this mechanism through an agreement enabling governors to authorize engagement of road contractors for post-disaster rehabilitation works without prior

central government approval. Governors of provinces affected by Ketsana and Haima/Nok-Ten used this authority to ensure the timely facilitation of road rehabilitation works. However, there was a lack of guidance and little oversight during the implementation of this policy. Key issues that have emerged include the use of financing for ‘non-essential’ road repairs based on inadequate post-disaster damage assessments and the inability to mobilize adequate finances for works completed (leading to significant provincial debt). This demonstrates the importance of systematically providing for oversight mechanisms when adopting fast track procurement systems, to avoid the risks of misuse of funds and inefficiency.

*Box 16: Examples of Fast-Track Procurement*

### **Ensure Government Coordination and Support Local Implementation**

It is necessary to define the recovery vision and policy at the highest levels of government to ensure acceptance and coherent application across the many simultaneous ongoing reconstruction projects and then confirm this vision and associated policies in the disaster recovery framework. A tiered implementation is recommended within the DRF process that balances national government policy setting with implementation at the local level. Program implementation should take place at the local level, closest to the affected communities and individuals.

It is the role of the lead agency to establish and oversee the coordination mechanisms that guarantee coherent policy application and effective implementation at the regional and local levels. The work of the implementing agency is overseen by the lead agency within the context of a coordination mechanism.

In the context of implementing a recovery program, coordination includes assigning different areas of recovery to governmental or nongovernmental agencies based on their areas of expertise. The involvement of a variety of actors in implementation can contribute to resource pooling, new initiatives and innovations, and improvement in quality and speed of implementation. This could also make the recovery more transparent and participatory, but not necessarily. It really is the use of transparency mechanisms such as monitoring and evaluation which would make the recovery more transparent, not the number or variety of participating actors. For instance, having a multitude of actors participating to the recovery, as was the case in Haiti, could also lead to difficulties for a government to control the recovery process. One coordination approach involves harnessing the ongoing cluster groups of humanitarian organizations. Their convening power can continue the coordination into the recovery phase of monitoring achievements and ongoing projects.

Coordination can take place both vertically and horizontally. When the implementing agency interacts with the national government and local administration, it is a case of vertical coordination. When the agency starts working with the private sector, NGOs, and CSOs to allocate areas of responsibilities and maximize the use of resources in the course of implementation, it is a case of horizontal coordination.

Several types of coordination mechanisms can be set up, depending on the type of coordination and stakeholders. A coordination mechanism at each level of policy-making, planning, and implementation is helpful in developing consensus and resolving conflicts and disputes. Some coordination mechanisms that are functioning or can be set up to support recovery implementation are<sup>61</sup>:

- **Task Force/Empowered Committee.** Consisting of senior politicians, administrators, and professional experts, the task force can be set up at a high level in the government to develop a recovery policy/program.
- **Donor Coordination.** Coordination can be accomplished by the lead agency assigning a donor lead responsibility for specific sectors or projects.
- **NGOs' Coordination Committee.** The government can set up the committee at the subnational level to assist the NGOs with their participation in the recovery program. In this forum, NGOs meet the government officials and resolve all the program issues. The committee also provides NGOs with the necessary support and authorization to implement.
- **Local Level Project Management Committee.** This committee can consist of local government officials, NGOs, and representatives of affected communities.

Policy and coordination for recovery can be overseen by the lead agency, but responsibility for implementation is best positioned at the local level.<sup>62</sup> There is no single recipe to decide if the implementation should be centralized within a single agency or within different agencies and at various levels. The form of governance of a country should lead to the best formula. For instance, a country with a history of centralized power could benefit from centralizing the implementation within a single agency, because the agency is likely to have stronger capacities than those of the local levels. On the other side, in countries that are effectively decentralized and where fiscal capacity is strong at the local levels, local implementation is likely to be the best solution. Indeed, as much as possible, decisions for implementation must be made by those responsible for them.

Local decision-making empowers the implementing agencies and creates greater ownership of the decisions among affected communities. Governments that have a decentralized form of governance by law but have not yet reached a full operationalization of the decentralization should also be wary of deferring too much responsibility to the local levels. For instance, the law may provide for fiscal decentralization but in reality, the transfers from the central to the local governments are inexistent or incomplete, and local fiscal capacity is weak. In this case, the central government is more likely to be the right level to pilot the implementation. This does not mean that local levels should not be associated systematically to the implementation of recovery. It

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<sup>61</sup> The coordination mechanisms are adapted from the draft National Disaster Recovery Framework, India, 2015.

<sup>62</sup> T. Courchene, J. Martinez-Vazquez, C.E. McLure, Jr., and S.B. Webb, "Principles of Decentralization," in *Achievements and Challenges of Fiscal Decentralization: Lessons from Mexico*, Washington, DC: World Bank, 2000, 85, <http://www1.worldbank.org/publicsector/LearningProgram/Decentralization/achievementsandchallengesTOC.pdf>.

means that governments should carefully reflect on the institutions that are the most capable technically and financially to lead the implementation of the recovery.

Local implementation helps build community ownership of the recovery process. Involving people and communities on the ground will empower them and provide them with the opportunity to find local solutions to local problems. Additionally, local implementation could build, if necessary, the capacity of implementing agencies to manage small to large-scale projects.

### **Responsibilities Delegated to Sub-National Levels**

- Since 2010, Chile has developed a mixed approach of central financing and reliance on established assistance practices that asked provinces and municipalities to participate in recovery partnership that included local government, the private sector, and civil society groups.
- After the 2010 earthquake and in the absence of a robust central government, municipalities in Haiti often collaborated with NGOs and faith-based organizations on the ground while receiving resources on an ad hoc basis.
- In Pakistan, after the 2005 earthquake, the ERRA's tiered system provided individual programs at the local level with independent decision-making over which initiatives to implement.

*Box 17: Examples of Responsibilities Delegated to Sub-National Levels*

### **Ensure multi-agency and multi-tier inclusion while avoiding duplication of effort**

Unifying recovery policy and implementation under one programmatic umbrella could generate optimal results. However, a unified approach to disaster recovery should not come at the expense of maximizing the efforts of the other organizations and entities that are supporting the overall recovery effort. As a minimum it should be clear what each agency's recovery program involves so that beneficial synergizes can be encouraged, duplications reduced, and gaps identified.

These organizations may be stratified both horizontally and vertically, belong to ministries that do or do not have a history of interagency cooperation, and maintain a broad mix of discreet institutional priorities. These organizations also could exist both within and beyond the public sector. Examples of the latter case are NGOs, civil society groups, and private sector actors. The lead recovery agency should have the authority to put in place mechanisms to avoid duplication of effort and wasting scarce resources.

### **Ensuring Multi-Agency Inclusion while Avoiding Duplication.**

- After the 2008 earthquake, China's Wenchuan Earthquake Restoration and Reconstruction Coordination Group was established to coordinate and communicate between government agencies at national and local levels.
- In Pakistan, the establishment of ERRA institutionalized multi-tier collaboration at the local, technical, and ministerial levels to engender ownership across a wide range of stakeholders.
- In Haiti, after 2010, no single participatory planning process existed at a national level, so NGOs and other executing agencies sought input from beneficiaries at the project level in order to meet urgent humanitarian needs.

*Box 18: Ensuring Multi-Agency Inclusion while Avoiding Duplication*

### **Lead Agency Ensures That All Recovery Stakeholders are Part of the Coordination Mechanism**

Because NGOs and the private sector are vital implementing agencies, it is crucial that they be included in lead agency coordination mechanisms. Their inclusion helps to ensure that some level of policy coherence is maintained across the many reconstruction programs being implemented within the government and externally.

### **Ensure Community Participation**

#### **Community Participation is a Cornerstone of the Recovery Process**

A principal resource available for recovery is the affected people themselves and their local knowledge and expertise. Affected people include those people affected by the recovery process—not simply to disaster event. Affected people need to be included and consulted throughout the process in assessments, defining problems and needs, identifying solutions and implementing projects, and giving feedback. The lead agency is responsible for ensuring this participation, establishing the necessary communication, consultation and engagement mechanisms and working closely with civil society and nongovernmental organizations to enable people to be heard. The dialogue with affected populations should start before a disaster hits, identifying populations that have been affected by a disaster in the past and are at risk of a new one. Understanding which recovery activities worked and which did not is key to ensuring mistakes from the past are not repeated and that successful solutions can be replicated.

Beneficiary participation also should enable those who may be marginalized within their communities such as women; the elderly; people with a disability; young people; and members of certain social classes, castes, or ethnic groups. It is essential that all affected population are heard: not only the representatives from the communities, but the communities themselves.

Incorporating local knowledge and expertise into recovery and ensuring community ownership of it are effective means to ensuring the long-term success of the recovery and to guarantee that it meets real needs and provides sustainable solutions.

### **Civil Society and Nongovernmental Organizations Can Ensure Community Participation**

Civil society and nongovernmental organizations often have well-cultivated links to the affected communities so they can play formal roles in ensuring community participation and managing implementation. Ensuring the participation of civil society and NGOs in defining and implementing the post-disaster recovery from the outset provides the Government with access to their knowledge and connections.

NGOs are instrumental in the implementation of projects. In many instances, government authorities can outsource projects to NGOs that are made up of members of the affected communities. Project agreements can be drawn up between the government and the NGO to ensure transparency and fairness.

### **Support the Role of the Private Sector**

#### **Public and Private Sectors Gain by Working Together for Recovery**

Whether it is or not affected by the disaster, the private sector pays a significant amount of the cost of recovery and reconstruction. It designs the structures and infrastructure that are built. It supplies the materials that enable reconstruction. Finally, the private sector performs the construction itself. If local, national, and regional economies are to grow and to be built back better after a disaster, the participation of the private sector in recovery planning and operations is paramount.

The private sector can play three roles in disaster recovery:

1. Its members are purveyors of goods and services participating in an economic transaction.
2. Some of its members are community institutions that are staffed by community members.
3. Its members are charitable donors of goods, services, and expertise.

A formal relationship that links private entities to the official response and recovery institutions in the form of public-private partnerships (PPPs) should be investigated. PPPs can be fostered, and the relationships built long before disasters strike to maximize time and efficiency when a disaster strikes.

The benefits of PPPs include:

- PPPs enhance both the government's and the private sector's ability to recover from financial losses; loss of market share; and damage to infrastructure, equipment, products,

or business interruption by assembling resources and forces and making preparedness a win-win option.

- PPPs facilitate the government's job by making compliance with regulatory and safety requirements everybody's concern. PPPs also can increase oversight to prevent corruption, which remains a major risk that trigger disasters.
- PPPs reinforce social bonds among community members, local governments, and the business community.

### **Fostering partnerships with the private sector and NGOs in the Philippines<sup>63</sup>**

Following Typhoons Ondoy (Ketsana), Pepeng (Parma) and Frank (Fengshen), the Government of the Philippines entered into a cooperation agreement with a private sector coordinating body called the Philippine Disaster Recovery Foundation (PDRF). It is composed of large private sector entities and their socio-civic units to participate in government-led efforts, bringing their own resources, partnerships and expertise. Following Typhoon Yolanda in 2013, the Philippine Disaster Recovery Foundation and other private firms have been involved in setting up cash for work programs, providing transitional shelters, rebuilding classrooms, and providing start-up capital and basic financial training to micro-entrepreneurs, among other activities. As government implementing agencies and local government units were extremely overwhelmed by demands to restore services, the private sector and non-government organizations helped bridge gaps in implementation capacity. Many NGOs also received direct funding from government to scale up their projects and reduce the gaps on the ground. The private sector and NGOs have been able to implement recovery programs relatively faster because of less bureaucratic restrictions, more flexible procurement policies, and adaptive delivery mechanisms. However, the scale of their interventions was limited and targeted.

*Box 19: Fostering partnerships with the private sector and NGOs in the Philippines*

### **Professional Associations Can Provide Expert Advice on Recovery Planning**

Expert and industry associations, such as those for engineers, agriculturalists, and educators, can serve as focal points for expert advice on recovery and reconstruction planning. Dialogue with these experts can start before a disaster strikes to ensure preparation and efficient post-disaster response. They should be carried out after the disaster as well, to adapt responses to the specific disaster profile and effects. Professional associations can also provide valuable information on operational aspects of recovery. They often have informal (anecdotal) familiarity with contractors and their particular industries. The expert and industry associations can evaluate tenders and contracting bids, and act in other positions that require widespread industry knowledge. Regarding tenders, the associations can provide an increased level of transparency and fairness to the selection

<sup>63</sup> Source: Country Case Study Series, The Philippines, Disaster Recovery Framework Guide / April 2014

process. Both are particularly useful when the influx of donor money makes tender selection a contentious issue.

### **Set-up Monitoring and Evaluation Systems**

Monitoring and evaluation systems can be used to track both program implementation and funding. Experience has shown that governments tend to poorly or simply not implement monitoring and evaluation systems linked to disaster recovery. This is problematic because this means that when recovery programs are not well implemented these may continue to run their course instead of being readjusted and improved. This also means that the misuse of funds linked to project implementation may go unnoticed. Likewise, funding gaps may not be identified in time. Governments should therefore pay close attention to establishing a functional monitoring and evaluation process. This relies on a proper data collection and management computer-based system with associated staff to manage and monitor the recovery programs. The system should also be able to provide information on how the recovery interventions are contributing to national policies and strategies. Finally, the system should be able to track not only the recovery programs managed by the government but also those of the different partners that implement the DRF. Effective monitoring and evaluation (M&E) systems enable the progress of recovery to be assessed, ensure compliance with sectoral recovery policies and strategies, and provide early warning for corrective action. Ongoing M&E is critical to communicate progress or lack of progress to the community and stakeholders and identify mid-course corrections in the implementation and adjust the strategy, particularly in response to community feedback about project design and results.

Importantly, M&E provides substantive inputs into the periodic evaluations that donors require to continue funding projects.

Establishing an M&E system involves defining *what* to monitor and evaluate (activities and outcomes), *when* to monitor and evaluate (timing and frequency), *how* to monitor and evaluate (tools and indicators), *who* will monitor and evaluate, and *how* to use the results. An effective M&E system for recovery should be able to:

- Track physical progress of reconstruction activities
- Track results for other recovery activities outside scope of reconstruction
- Provide regular and comprehensive information on allocation and disbursement of funds (public and private)
- Provide data for evaluating economic and social impacts of recovery programs
- Inform outcome-based mid-term review of the recovery implementation.<sup>64</sup>

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<sup>64</sup> UNDP (United Nations Development Programme), Handbook on Planning, Monitoring and Evaluating for Development Results, NY: UNDP: 2009, <http://web.undp.org/evaluation/handbook/documents/english/pme-handbook.pdf>.

Developing and testing standard and sector specific M&E systems before a disaster strikes will ensure that these are understood by all relevant institutions and can be mobilized properly in the post-disaster recovery implementation phase.

### Ongoing Monitoring Necessary

Monitoring is a continuous activity that indicates whether activities are on track. Monitoring both results and activities is recommended. Results monitoring refers to monitoring recovery objectives and priorities. Ideally, results monitoring should be done quarterly and be conducted or guided by the main implementing agency.

### Results Framework Implemented Best Through Results Monitoring System

The results framework should be implemented through a systematic Results Monitoring System (RMS). The RMS specifies the monitoring and evaluation plans, data collection instruments, and indicator value-determination methodologies for all outputs and outcomes. Once fully developed, the RMS will also provide an overall medium-term M&E plan. This plan specifies the frequency, requirements, and means for monitoring, evaluating, and reporting, both at the broader level and for each of the selected outcomes.

#### **Ten Steps to Build and Sustain Results-Based M&E Systems**

Commonly used results-based M&E systems can be built and sustained by following the 10 steps below. With some modifications, these steps can be applied to post-disaster recovery programs to create effective M&E systems.

1. Conduct a readiness assessment
2. Agree on outcomes to monitor and evaluate
3. Select key indicators to monitor outcomes
4. Identify baseline data on indicators: ask “Where are we today?”
5. Plan for improvements: select results targets
6. Monitor results
7. Conduct evaluations
8. Report findings
9. Use findings
10. Sustain the M&E system within the organization

Dedicated management information systems (MIS) are required to build a results-based M&E system. MIS is the digital system to store all M&E information and collate results based on the different inputs.

*Box 20: Ten Steps to Build and Sustain Results-Based M&E Systems*

### Establishment of grievance response mechanisms

The promotion of transparency is supported by the establishment of grievance response mechanisms. These would allow the various stakeholders of the recovery process as well as benefitting communities to express themselves on what works and what does not, and to reflect on how to adopt corrective measures.

### Establish Communications Strategy for Recovery

Throughout the recovery process, it is in the government's best interest to maintain ongoing dialogue and share information with all other stakeholders and partners in the recovery. A well-defined internal and public communications strategy recognizes the different types of stakeholders and identifies the most effective means of communicating with them.

### Internal Communication among Recovery Partners

Internal communication includes all stakeholders directly involved in the recovery process. This communication can take many forms. Examples are a dedicated internal information-sharing website that includes access to the M& E database, peer dialogues among government agencies, focus group discussions with communities, or policy dialogues with donors. Such information-sharing can contribute to the transparency of recovery, build credibility and consensus on recovery goals, and identify coverage gaps and project overlaps. The setting up of solid internal communication systems prior to a disaster will help to create an internal communication system adapted to the recovery needs once a disaster strikes.

For example, information flows between sectors and line ministries can result in fewer coverage gaps and project overlaps among multisectoral programs. The government can schedule monthly decision meetings with international partners in which the recovery objectives of the government, private sector, and civil society are communicated. Such meetings will conserve the time of senior government officials, enabling them to stay focused on meeting their respective recovery milestones and objectives. Speaking with and mapping plans with planners, implementers, and community groups will strengthen transparency, minimize duplication of effort, highlight gaps in assistance, and build consensus for achieving common recovery goals.

Internal communication creates a space for exchange and feedback among all involved. This communication also can serve as one mechanism by which to redress grievances.

### Effective Public Communication

An effective public communications strategy can raise awareness of the recovery effort—policies, plans, and projects—among the general public, both national and international, particularly in donor countries. The strategy should define the key communications for broadcast, print, and

social media. These messages are intended to inform public expectations about the scope and timeframe of the recovery.

In addition, by recognizing visible signs of early physical recovery and announcing longer term goals, an effective public communication strategy can keep the entire recovery community and general public galvanized for subsequent phases of recovery and reconstruction.

Public communication initiatives can consist of:

- Using time markers (such as 100th day post-disaster; 6-month anniversary; 1-year anniversary) to show visible evidence and images of progress on websites of the different recovery institutional stakeholders
- Facilitating access for the media, if an issue, to do stories from the affected areas
- Organizing press conferences highlighting results from updated evaluations or feedback from field visits.
- Create visual or text content that tells the story of the different stages of the recovery process

### **Promote Transparency and Accountability in Recovery**

One of the challenges in implementing a recovery program is to control corruption and increase transparency. These two goals require instituting an audit system. The system encompasses public auditing of procurement and disbursements, carrying out a technical audit of the works carried out, and conducting a social audit of the benefits delivered. While, in most countries, a financial audit of accounts and expenditures is a well-established system, technical and social audits are relatively new, evolving concepts. A technical audit is an audit performed by an auditor, engineer or subject-matter expert to evaluate deficiencies or areas of improvement in a process, system or proposal. Technical audit covers the technical aspects of the project implemented in the organization. Social auditing is a process through which a recovery and reconstruction program is able to monitor its social, economic, and environmental benefits by involving all the stakeholders: NGOs, homeowners, donors, and the implementing agency.

#### **Use of New Technologies to Enhance Transparency in the Philippines**

Following Typhoon Yolanda in 2013, the Philippines leveraged several social media tools and knowledge-sharing platforms to strengthen the transparency of its recovery efforts for all stakeholders, most importantly, the general public.

- The Office of the Presidential Assistant for Rehabilitation and Recovery (OPARR) developed the web tool, EMPATHY, to monitor live progress of activities related to Yolanda recovery. The EMPATHY electronic infrastructure transmits information to the Office of the President via the Web-Based Emergency Operations Center (WebEOC).

- Foreign Aid Transparency Hub (FAiTH) is an online portal administered by the Department of Budget and Management. FAiTH provides information on disaster assistance pledged or given by countries and international organizations; as well as donations received by the Commission on Filipinos Overseas' (CFO), Lingkod sa Kapwa Pilipino program (LINKAPIL); and in the future, donations received by Philippine embassies abroad.
- Open Reconstruction is a website that enables all levels of government units to submit their reconstruction project requests and enables the public to track approved projects' progress. This website gives the public access to important post-disaster information: project requests by affected government units, financing by the national government, and statistics for both.

*Box 21: Use of New Technologies to Enhance Transparency in the Philippines*

Finally, the transparency and accountability should be reinforced with third-party financial audits and social audits.

## **Module 6 Checklist**

This checklist covers the different steps required to create effective institutional arrangements for recovery. The list is not comprehensive but provides an overview of the primary steps to be followed.

### **Lead Recovery Agency**

- ✓ Set up and run different coordination mechanisms. Coordinate responsibility for recovery across the national government, local government, donor, civil society, and community levels
- ✓ Include civil society, private sector, communities and NGOs in the recovery process
- ✓ Establish standard procedures for project approval, procurement, reporting, and contracts
- ✓ Define reconstruction standards
- ✓ Set up rapid procurement procedures
- ✓ Support decentralized implementation of the recovery activities
- ✓ Establish good internal communication among recovery partners. Discourage recovery actors from working in isolation
- ✓ Raise awareness of recovery progress through effective public communication. Set clear and realistic goals to minimize unrealistic expectations, and provide a grievance redress to communities
- ✓ Ensure transparency in all activities linked to the recovery program
- ✓ Promote third-party financial and social audits
- ✓ Undertake monitoring and evaluation of the recovery projects
- ✓ Propose mid-course corrections for improving recovery activities

## **ANNEX 1: INNOVATIONS TO SUPPORT DISASTER RELIEF AND RECOVERY**

Some novel technologies have been applied to recent disasters and other promising relief technologies are entering the research phase.

**Artificial intelligence (AI)** can be applied in the aftermath of a major earthquake to assist with relief and response efforts—some papers even suggest it can be applied to improve tsunami warning systems. Palo Alto, Calif.-based One Concern has developed an algorithm capable of identifying the areas most damaged and in need of aid following an earthquake. The company's algorithm has been taught how earthquakes damage buildings and structures and can be loaded with data in a given area such as the age of buildings and the materials used to construct them. Following an earthquake all of this information can be combined with seismic data, allowing the algorithm to create a heat map that predicts the most damaged areas.

Mentioning **drones and UAVs** can conjure up some negative imagery. However, the FAA recently released a statement praising the use of drones in relief efforts post Hurricane Irma. Various groups and organizations including the Air National Guard, Florida Power and Light, and private companies like Airbus have been deploying drones to assess damaged areas, assist with power restoration, and for search and rescue efforts. Drones were used to similar effect in the wake of Hurricane Harvey, even assisting insurance companies with disaster assessments. The American Red Cross has begun experimenting with drones for damage assessment in disaster areas as well.

**Rapid construction options** for durable and temporary shelter that can be deployed quickly for relief efforts have been flooding the market for years and innovations in this space are increasing as needs are being identified more clearly.

**Satellites** that see inside Hurricanes are making huge improvements in storm predictability. When Hurricane Maria hit San Juan, Puerto Rico much of the land-based radar used to provide information about the hurricane as it happens were destroyed. However, forecasters were able to turn to the National Oceanic and Atmospheric Administration (NOAA) for assistance. The NOAA's newest Geostationary Operational Environmental Satellite (GOES), the GOES-16, which was launched in November 2016, uses infrared imaging and is capable of scanning a hurricane as often as every 30 seconds, allowing forecasters a view inside the storm itself to capture detailed data on its intensity, position, and movement—allowing them to track Maria in real time. According to the NOAA, GOES-16 has four times the resolution and a five-times faster refresh rate than previous models, allowing for an unprecedented level of detail and accuracy.

In 2013, the United States Government through the White House Office of Science and Technology Policy (OSTP) and the Federal Emergency Management Agency (FEMA) jointly challenged a group of over 80 top innovators from around the country to come up with ways to improve disaster response and recovery efforts. This diverse group of stakeholders, consisting of representatives from Zappos, Airbnb, Marriott International, the Parsons School of Design,

AOL/Huffington Post’s Social Impact, The Weather Channel, Twitter, Topix.com, Twilio, New York City, Google and the Red Cross, to name a few, spent a day at the White House collaborating on ideas for tools, products, services, programs, and apps that can assist disaster survivors and communities. Below are some of the ideas that were developed throughout the day. In the case of the first two ideas, participants wrote code and created actual working prototypes.

- A real-time communications platform that allows survivors dependent on electricity-powered medical devices to text or call in their needs—such as batteries, medication, or a power generator—and connect those needs with a collaborative transportation network to make real-time deliveries.
- A technical schema that tags all disaster-related information from social media and news sites—enabling municipalities and first responders to better understand all of the invaluable information generated during a disaster and help identify where they can help.
- A Disaster Relief Innovation Vendor Engine (DRIVE) which aggregates pre-approved vendors for disaster-related needs, including transportation, power, housing, and medical supplies, to make it as easy as possible to find scarce local resources.
- A crowdfunding platform for small businesses and others to receive access to capital to help rebuild after a disaster, including a rating system that encourages rebuilding efforts that improve the community.
- Promoting preparedness through talk shows, working closely with celebrities, musicians, and children to raise awareness.
- A “community power-go-round” that, like a merry-go-round, can be pushed to generate electricity and additional power for battery-charged devices including cell phones or a Wi-Fi network to provide community internet access.
- Aggregating crowdsourced imagery taken and shared through social media sites to help identify where trees have fallen, electrical lines have been toppled, and streets have been obstructed.
- A kid-run local radio station used to educate youth about preparedness for a disaster and activated to support relief efforts during a disaster that allows youth to share their experiences.

## **ANNEX 2 INTEGRATED RESULTS FRAMEWORK FOR RECOVERY PLANNING**

The Integrated Results Framework for Recovery Planning aggregates and encapsulates the key results and outputs by each aspect of a recovery framework. This results framework is a useful tool that can be utilized for monitoring the process of recovery planning in sequential or thematic manner. This tool also provides a quick look at the key results of successful recovery planning at relevant stages of progression to ensure timely actions.

### **Preparing Prior to a Disaster**

<b>Results</b>	<b>Outputs</b>
<b>Develop Pre-Disaster Capacity to Implement Post-Disaster Needs Assessments</b>	Identification of a standard assessment tool to be used in case of a disaster
	Pre-designation of the institution(s) responsible for maintaining PDNA preparedness and conducting the assessments
<b>Prepare Recovery Frameworks Prior to a Disaster to Improve Resilience</b>	Government establishes clear roles and responsibilities for all actors in a recovery setting. Stakeholders include national and local governments, private sector, academia, and civil society organizations (CSOs), and communities
	National and decentralized multisectoral action plans are set to improve the institutional and legislative recovery arrangements in advance of disasters
<b>Establish Predictable Financing</b>	Activate special procedures for fast-track project procurement and implementation
	Establishment of draft agreements with potential donor governments and setting up mechanisms to receive and manage future contributions
	Establishment of an aid-tracking mechanism that enables the lead agency to manage, disburse, and account for funds with local implementers.

## Conducting Post-Disaster Damage and Needs Assessment

Results	Outputs
<b>Broad and Consistent Policy Framework for Recovery Planning through the PDNA</b>	Preliminary assessment reports
	Compilation and transmittal of damage and loss data to a centralized management unit
	Credible Disaster damage and needs assessment Quantitative and qualitative baseline for damage, loss, and needs across sectors and administrative divisions Results monitoring and evaluation plan for recovery program

## Planning and Policymaking for Recovery

Results	Outputs
<b>Develop a Central Vision for Recovery Acceptable to all Stakeholders</b>	Articulation of a recovery vision Setting up community meetings to build consensus for the recovery vision
	Working out the sectorial, geographic, and functional details of recovery
<b>Ensure Continuity from the Humanitarian Response to Recovery</b>	Adoption of the cluster approach for managing work in the different sectors impacted by the disaster.
	Maintenance of institutional knowledge from humanitarian response to recovery
<b>Develop a Centrally and Programmatic Overseen Approach to Recovery</b>	Establishment of a central meeting point for large scale recovery
	Adopt the 3 crucial principles for recovery planning <ul style="list-style-type: none"> <li>• Converting adversity into opportunity</li> <li>• Building Back Better</li> </ul>

	<ul style="list-style-type: none"> <li>• Prioritizing the inclusiveness of vulnerable groups</li> </ul>
	Determination of criteria for intersectoral prioritization to help ensure equitable and demand-responsive recovery across affected jurisdictions and communities.
	Sequencing of recovery activities according to the agreed order of prioritization
<b>Develop Sector-Specific Recovery Programs</b>	Consultative process and review of information from assessments and surveys to plan individual sectoral projects.
	Development of detailed sector-specific programs reviewed by affected communities

### **Institutional Arrangements for Recovery**

<b>Results</b>	<b>Outputs</b>
<b>Continuity between Relief and Recovery</b>	Maintenance of institutional knowledge from humanitarian response to recovery
<b>Assessment of Human Resource Capacity and Specialist Skills Required</b>	Appropriate capacity assessments are conducted
<b>Mandate and Operational Modalities for Lead Recovery Agency</b>	The most relevant institutional framework is chosen and developed to be central body behind which donors and partners align financing and efforts
<b>An Empowered Recovery Institution with Effective Leadership</b>	Choosing the appropriate leader for an empowered recovery institution
<b>Institutions with Clear Purpose and Jurisdiction</b>	Appropriate attention is given to all lost/damaged assets; focus is kept on recovery
<b>Ensuring Adequate Human Resources throughout Recovery Process</b>	Employ necessary professional and technical human resources

<b>Recovery Program That Integrates Civil Society and Private Sector Participation</b>	Mechanisms to include civil society, private sector, and expert associations in recovery
<b>Decentralized Implementation Guided by Centrally Established Policy and Coordination</b>	Clear structures for setting recovery policy and implementation
<b>Well-Managed Integration of International Agencies and Development Partners</b>	Institutionalizing role of international agencies and development partners; establishment of donor coordination forums

### **Financing Mechanisms for Recovery**

<b>Results</b>	<b>Outputs</b>
<b>Quickly Quantify the Economic Costs of the Disaster</b>	Undertake a PDNA to quantify the economic costs and as a basis for resource mobilization
<b>Identify and Mobilize sources of Financing</b>	Depending on the scale of the disaster and the capacity of a national economy, the government may either rely largely on national resources, or appeal to external sources for funding
<b>Adequate Financing for Recovery</b>	Revised budgetary allocations focusing initially on post-disaster response and later on recovery
<b>Functioning Financial Systems for Recovery</b>	Financial system endorsed by the highest political level able to absorb inflows.
<b>Strengthened Public Financial Management</b>	Policy that strengthens and establishes effective modalities in PFM.
	Model to manage resources coming from bilateral and multilateral donors.
<b>Adequate Monitoring &amp; Evaluation</b>	Establish procedures for sharing assessment data with implementing agencies. Identify means for monitoring and auditing transfers and use of funds.

	Financial oversight mechanisms that enhance the confidence that recovery funds are being spent for the intended purposes.
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### **Implementation Arrangements for Recovery**

<b>Results</b>	<b>Outputs</b>
<b>Set-up Monitoring and Evaluation Systems</b>	<ul style="list-style-type: none"> <li>• Conduct of a readiness assessment</li> <li>• Agreement on outcomes to monitor and evaluate</li> <li>• Selection of key indicators to monitor outcomes</li> <li>• Identification of baseline data on indicators</li> <li>• Planning for improvements: selection of results targets</li> <li>• Monitoring of results</li> <li>• Conduct of evaluations</li> <li>• Report on the findings</li> <li>• Use of the findings</li> </ul>
<b>Establishment of feedback and complaint handling mechanisms</b>	Evaluation framework established early in recovery process, allowing for mid-course corrections and early partner buy-in
<b>Reconstruction standards applied to relevant projects</b>	Standards are defined by local stakeholders from both the government and civil society, including NGOs and the private sector
<b>A local Implementation Process</b>	Community-owned projects that meet real needs
<b>Fast, Efficient, and Transparent Procurement</b>	Faster procurement with more reliable contractors
<b>Effective Internal Communication Between Recovery Partners</b>	Information easily shared between sectors and ministries

	Ongoing consultations between central government and communities.
<b>Effective Public Communication</b>	Public communication campaign enables all actors to be aware of changes in the recovery program.
	Communicate clear and realistic goals for recovery, minimizing unrealistic expectations.
<b>Transparency Resulting in Confidence Among all Recovery Stakeholders</b>	More reliable results information available. Partners work together to produce information and analyze results.

## **GLOSSARY**<sup>65</sup>

**Adaptation:** The adjustment in natural or human systems in response to actual or expected climatic or other stimuli or their effects, which moderates harm or exploits beneficial opportunities.

**Audit:** An official examination and verification of accounts and records to analyze the legality and regularity of project expenditures and income, in accordance with laws, regulations, and contracts, such as loan contracts and accounting rules. It also may analyze the efficient and effective use of funds.

**Baseline data:** Initial information collected during a post-disaster needs assessment, including facts, numbers, and descriptions of the pre-disaster situation. This information will permit a comparison between the pre and post-disaster situations.

**Basic needs:** The items that people need to survive. They can include safe access to essential goods and services such as food, water, shelter, clothing, healthcare, sanitation, and education.

**Build Back Better (BBB):** The use of the recovery, rehabilitation and reconstruction phases after a disaster to increase the resilience of nations and communities through integrating disaster risk reduction measures into the restoration of physical infrastructure and societal systems, and into the revitalization of livelihoods, economies and the environment.

**Building code:** A set of ordinances or regulations and associated standards intended to control aspects of the design, constructions, materials, alteration and occupancy of structures that are necessary to ensure human safety and welfare, including resistance to collapse and damage.

**Cash transfers:** Direct payments or vouchers to provide resources to affected populations.

**Capacity:** The combination of all physical, institutional, social, and/or economic strengths, attributes, and resources available within a community, society, or organization that can be used to achieve agreed goals. Also includes collective attributes such as leadership and management.

**Capacity building:** process by which individuals, groups, and organizations build their knowledge, abilities, relationships, and values to solve problems and achieve development objectives. The impacts of capacity building thus may be seen at different scales—individual, households, communities, and governments.

**Climate change resilience:** The ability to resist, absorb, adapt to, and recover from meteorological changes attributed directly or indirectly to human activities that alter the composition of the global atmosphere or the natural climate variability. See also “Resilience.”

**Community:** A social group of any size whose members reside in a specific locality, share government, and often have a common cultural and historical heritage.

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<sup>65</sup> Some of the definitions in the glossary are based on ISDR and Safer Homes’ definitions.

**Community contracting:** Procurement by or on behalf of a community. While there are many different models of community contracting, a common feature is that they seek to give the community degrees of control over investment and implementation, to encourage ownership and sustainability.

**Complementarities:** Complementarities refer to a situation where two or more factors increase each other's effects on performance.

**Consequences:** Outcomes of an event, such as a landslide hazard. Depend on the exposure and vulnerability of the elements at risk, such as human beings, houses, and infrastructure.

**Corruption:** Misuse of an entrusted position for private gain by using bribery, extortion, fraud, deception, collusion, and money-laundering. Includes gains accruing to a person's family members, political party, or institution in which the person has an interest.

**Direct costs (or damage):** Reconstruction costs incurred by total or partial destruction of physical assets existing in the affected area. Damage occurs during and immediately after the disaster and is measured in physical units. Its monetary value is expressed in terms of replacement costs according to prices prevailing just before the event.

**Disaster:** A situation or event that overwhelms local capacity, necessitating a request to a national or an international level for external assistance; an unforeseen and often sudden event that causes great damage, destruction, and human suffering.

**Disaster risk management (DRM):** Systematic process of using administrative directives, organizations, and operational skills and capacities to implement strategies, policies, and improved coping capacities to lessen the adverse impacts of hazards and the possibility of disaster.

**Disaster risk reduction (DRR):** Concept and practice of reducing disaster risks through systematic efforts to analyze and manage the causal factors of disasters. Results of DRR include reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness.

**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; and in sufficient time to reduce the possibility of harm to or loss of life or livelihoods, injury, damage to property, and damage to the environment. A people-centered early warning system comprises four key elements. They are (a) knowing the risks; (b) monitoring, analyzing, and forecasting the hazards; (c) communicating or disseminating alerts and warnings; and (d) developing the local capacities to respond to the warnings. The term "end-to-end warning systems" is used to emphasize that warning systems need to span all steps from detecting hazards to the community's response.

**Efficient recovery:** Stabilizing lives and livelihoods to return to normal; and rapidly restoring critical social, physical, and productive infrastructure and service delivery.

**Effective recovery:** Achieving the intended outcomes of medium- to long-term recovery such as the rehabilitation and reconstruction of damaged infrastructure and the re-creation of sustainable livelihoods and income-generating opportunities.

**Empowerment:** Authority given to an institution, organization, or individual to determine policy and make decisions.

**Enabling environment:** The rules and regulations, both national and local, which provide a supportive environment for a specific activity, such as community participation or DRM, to take place.

**Equity:** Quality of being impartial and “fair” in the distribution of development benefits and costs and the provision of access of opportunities for all.

**Ex-post measures:** Actions taken after a disaster has occurred to seek to mitigate or repair all damages caused by the disaster.

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

**Extensive risk:** Widespread risk associated with the exposure of dispersed populations to repeated or persistent hazard conditions of low or moderate intensity, often of a localized nature. Such persisting exposure can have debilitating cumulative disaster impacts. This type of risk is a characteristic primarily of rural areas and urban margins. See also “Risk” and “Intensive risk.”

**Flood:** General and temporary condition of partial or complete inundation of normally dry land areas from (a) the overflow of inland or tidal waters, (b) the unusual and rapid accumulation or runoff of surface waters from any source, or (c) mudflows or the sudden collapse inland of shoreline.

**Flood forecasting:** Use of real-time precipitation and streamflow data in rainfall-runoff and streamflow routing models to forecast flow rates and water levels from a few hours to days ahead, depending on the size of the watershed or river basin.

**Forecast:** Definite statement or statistical estimate of the likely occurrence of a future event or conditions for a specific area.

**Fungibility:** Property of a good or a commodity whose individual units are capable of mutual substitution.

**Green growth:** Growth that is efficient in its use of natural resources; clean in that it minimizes pollution and environmental impacts; and resilient in that it takes into account natural hazards and the role of environmental management and natural capital in preventing physical disasters.

**Hazard:** Natural process or phenomenon or human activity that has the potential to cause property damage, loss of livelihoods and services, social and economic disruption, and/or environmental degradation.

**Housing:** Immediate physical environment, including inside and outside of buildings, in which families and households live and so serves as a shelter.

**Housing-sector assessment:** Assessment that collects data including demographic, housing types, housing tenure status, settlement patterns before and after the disaster, government interventions in the housing sector, infrastructure access, construction capacity, and market capacity to provide materials and labor for reconstruction.

**Humanitarian relief:** Process that seeks to lead to sustainable development opportunities by generating self-sustaining processes for post-disaster recovery. Humanitarian relief encompasses livelihoods, shelter, governance, environment, and social dimensions, including the reintegration of displaced populations. It also addresses the underlying risks that contributed to the crisis.

**Infrastructure:** Systems and networks by which public services are delivered. These services include water supply and sanitation, energy, and other utility networks, and transportation networks for all forms of travel.

**Intensive risk:** Risk associated with the exposure of large concentrations of people and economic activities to intense hazard events that can lead to potentially catastrophic disaster impacts involving high mortality and asset loss. A characteristic primarily of large cities or densely populated areas that not only are exposed to intense hazards but also have high levels of vulnerability to them. See also “Risk” and “Extensive risk.”

**Key performance indicators (KPIs):** Quantitative and qualitative measures of project outputs and outcomes used to evaluate the progress of success of the project.

**Livelihoods:** The ways in which people earn access to the resources that they need, individually and communally, including food, water, clothing, and shelter.

**Losses:** Include the decline in output in productive sectors and the lower revenues and higher operational costs in the provision of services. Also considered losses are the unexpected expenditures to meet emergency needs. Losses are expressed in current values.

**Loss assessment:** An assessment that analyzes the changes in economic flows that occur after a disaster and over time, valued at current prices.

**Mitigate/mitigation:** The use of reasonable care and diligence to minimize damage; to take protective action to avoid additional injury or loss; to lessen or limit the adverse impact of hazards and disasters.

**Monitoring:** Ongoing task of collecting and reviewing program-related information that pertains to the program’s goals, objectives, and activities.

**Needs assessment:** Process for estimating (usually based on a damage assessment) the financial, technical, and human resources needed to implement the agreed program of recovery, reconstruction, and risk management.

**Note:** The central Location for staff and materials during a disaster event.

**Nonstructural measure:** Any measure not involving physical construction that uses knowledge, practice or agreement to reduce risks and impacts, particularly through policies and laws, public awareness-raising, training, and education. See also “Structural measures.”

**Off-budget financing:** Could not be managed directly by the national government or is not comprised in its budget.

**On-budget financing:** Within the national government’s control, including Own Source Revenue (OSR) as well as external funding and loans.

**Partners:** Donor community or any group or individual taking part and sharing the responsibility of the reconstruction and recovery process. In contrast, see “Stakeholders.”

**Physical planning:** Design exercise based on a land use plan to propose optimal infrastructure for public services, transport, economic activities, recreation, and environmental protection for a settlement or area. A physical plan can have rural and urban components.

**Policy:** Principle or protocol to guide decisions and achieve rational outcomes.

**Post-disaster needs assessment (PDNA):** A multisectoral assessment that measures the impact of disasters on the society, economy, and environment of the disaster-affected area.

**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.

**Prevention:** To avoid and minimize the adverse impact of related environmental, technological, and biological disasters by raising public awareness and providing education related to disaster risk reduction, changing attitudes and behavior.

**Prior measures (ex-ante):** Actions taken in advance of a disaster in the expectation that they will either prevent or significantly reduce the impacts of a possible disaster.

**Project outputs:** Results of a project that are measurable at the immediate point of project completion.

**Preliminary assessment:** Assessment that provides immediate information on needs, possible interventions, and resource requirements. May be conducted as a multisectoral assessment or in a single sector or location.

**Reconstruction:** Restoration and improvement, where possible, of facilities, livelihoods, and living conditions of disaster-affected communities, including efforts to reduce disaster risk factors. Focuses primarily on the construction or replacement of damaged physical structures, and the restoration of local services and infrastructure.

**Recovery:** Decisions and actions taken after a disaster to restore or improve the pre-disaster living conditions of the affected communities while encouraging and facilitating necessary adjustments to reduce disaster risk. Focuses not only on physical reconstruction but also on revitalization of the economy and the restoration of social and cultural life.

**Recovery framework:** Pragmatic, sequenced, prioritized, programmatic, yet living (and flexible) action plan that ensures resilient recovery after a disaster.

**Relief:** Provision of assistance or intervention immediately after a disaster to meet the life preservation and basic subsistence needs of the persons affected.

**Relocation:** Process whereby a community's housing assets and public infrastructure are rebuilt in another location.

**Residual risk:** The risk that remains in unmanaged form, even when effective disaster risk reduction measures are in place, and for which emergency response and recovery capacities must be maintained. The presence of residual risk implies a continuing need to develop and support effective capacities for emergency services, preparedness, response, and recovery together with socioeconomic policies such as safety nets and risk transfer mechanisms.

**Resilience:** The ability of a system, community, or society exposed to hazards to resist, absorb, accommodate, and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential structures and functions. Resilience is determined by the degree to which the community has the necessary resources and is capable of organizing itself both prior to and during times of need.

**Resilient recovery:** Builds resilience during recovery and promotes resilience in regular development. Resilient recovery is a means to sustainable development. See also "Resilience," "Recovery," "Disaster risk management," and "Disaster risk reduction."

**Response:** The provision of emergency services and public assistance during or immediately after a disaster to save lives, reduce health impacts, ensure public safety, and meet the basic subsistence needs of the people affected. See also "Humanitarian relief."

**Right-siting:** Facilities are rebuilt in areas that are less prone to disasters and accessible to the community.

**Right-sizing:** Rebuilding facilities such that they adequately respond to the existing demand; for example, if classes are crowded, more classes could be built.

**Risk:** The combination of the probability of an event and its negative consequences.

**Risk transfer:** Process of formally or informally shifting the financial consequences of particular risks from one party to another. In this transaction, one party (household, community, enterprise, or state authority) will obtain post-disaster resources from another party in exchange for ongoing or compensatory social or financial benefits.

**Scoping:** Investigation or discussion to determine the effect that a proposed policy or project would have on a community or the environment.

**Stakeholders:** Groups who have any direct or indirect interest in the recovery interventions, or who can affect or be affected by the implementation and outcomes. Term includes groups undertaking, managing, reporting on, affected by, promoting, and funding the interventions. Stakeholders include vulnerable segments of the population, local governments that are in direct dialogue with communities.

**Structural measure:** Any physical construction to reduce or avoid possible impacts of hazards, or application of engineering techniques to achieve hazard-resistance and resilience in structures or systems. See also “Nonstructural measures.”

**Subsidiarity:** Principle by which matters ought to be handled by the smallest, lowest or least centralized competent authority.

**Sustainable development:** Development that meets the needs of the present without compromising the ability of future generations to meet their own needs. This 1987 Brundtland Commission definition does not address questions regarding the meaning of the word “development” and the social, economic, and environmental processes involved. Disaster risk is associated with unsustainable elements of development such as environmental degradation. Conversely, disaster risk reduction can contribute to sustainable development by reducing losses and improving development practices.

**Targeting:** Identification and recruitment by local communities, government, or external agencies of potential assistance recipients.

**Vulnerability:** Characteristics and circumstances of a community, system, or asset that make it susceptible to the damaging effects of a hazard.

**Vulnerable groups:** Groups or members of groups who are particularly exposed to the impacts of hazards. Examples are displaced persons, women, the elderly, the disabled, orphans, and any group subject to discrimination.

**Watershed:** Area of land from which all of the water under it or on it drains to the same place, which may be a river, lake, reservoir, estuary, wetland, sea, or ocean.

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