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# Disaster Risk Reduction to achieve the Sustainable Development Goals

**A toolkit for  
parliamentarians**

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# About this toolkit

In 2019, the Inter-Parliamentary Union (IPU) passed the following resolution calling on parliamentarians to include disaster risk reduction (DRR) in their strategies for implementing and achieving the Sustainable Development Goals (SDGs) and the Paris Agreement. This toolkit explains the importance of DRR and how to implement it, and provides 10 actions that parliamentarians can employ to effectively influence and implement DRR policy, legal, financial and oversight frameworks adapted to their country's context. DRR reduces the economic and societal impacts of disasters, maintains and restores ecosystems, and protects and expands development gains.

## **141st IPU Assembly, Resolution: "Addressing Climate Change" (Belgrade, Serbia, 13–17 October 2019)**

Calls on all parliamentarians to work with their governments in partnership with all stakeholders to implement the Paris Agreement by moving towards rapid implementation of the SDGs, thereby contributing to the enhancement of resilience and adaptation to climate change, and in particular open a dialogue with the younger generation;

Calls on national parliaments to urge their governments, in line with the Sendai Framework for Disaster Risk Reduction 2015–2030, to support the development of comprehensive national resilience mechanisms, strengthen disaster risk reduction and prevention, enhance disaster preparedness for effective responses, and invest in risk-reduction measures and societal resilience for disasters including, inter alia, desertification, deforestation, sand storms and mass flooding;

Strongly appeals for a significant shift and enhancement in financial, technological and capacity-building assistance for developing countries towards adaptation rather than mitigation.

The toolkit's first section defines DRR, the changing nature of disasters and disaster risk, and the importance of DRR in climate change adaptation (CCA) and sustainable development. The second section reviews parliaments' mandate for DRR, the third section presents 10 recommended DRR actions, and the fourth section defines how to implement these actions and includes brief high-level national and regional examples. The fifth section suggests opportunities when parliamentarians can act on DRR. The annexes contain a glossary, background information and a resource list for more detailed information.

# Foreword

The COVID-19 pandemic has put risk front and centre. No one has been immune and the power (or lack thereof) of the state to prevent, prepare and respond has been severely tested. Public tolerance for risk is decreasing; citizens around the world are increasingly exposed to growing and compounded risks due to the climate emergency, which has been compounded by the pandemic and the ensuing subsequent socio-economic crisis. Risk is everybody's business.

The Sendai Framework for Disaster Risk Reduction (2015-2030) puts responsibility for risk reduction squarely at the foot of the state. Risk reduction requires whole-of-society involvement, but primary responsibility is borne by the state. Parliaments and parliamentarians are uniquely positioned to catalyse, oversee and monitor disaster risk reduction laws and policies and their impact at local levels. The Sendai Framework explicitly calls for parliamentarians to develop new or amend existing disaster risk reduction-related legislation, set budget allocations and hold governments accountable for public protection.

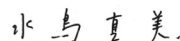
In addition to their legislative, budgetary and oversight functions, parliaments play a bridging role between government, civil society and citizens, and are duty-bound to represent and to encourage participation of all sectors of society. This is critical when it comes to reducing risk; COVID-19 has demonstrated that in this age of systemic risk we are not safe until we are all safe.

This guide was designed to assist parliaments and parliamentarians to initiate, strengthen and oversee national, subnational and local development, progress and investment to develop and implement DRR legislation and policy. The guide offers 10 actions parliamentarians can take to advance risk reduction in their countries. This in turn strengthens implementation of the Sendai Framework and progress towards achieving the Sustainable Development Goals.

We look forward to working with parliamentarians around the world to ensure that the key actions outlined in this guide are implemented, and parliamentarians equipped as effective risk reduction partners.



Martin Chungong  
IPU Secretary General



Mami Mizutori  
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the Secretary-General for  
Disaster Risk Reduction  
and Head of UNDRR

# What needs to change?

In our increasingly interconnected world, risks and impacts are transferred across nations and around the globe. Disasters are now complex, interdependent events and their rising social and economic impacts require a fundamental shift in how disaster risks are managed to protect economic and development gains and achieve the Sustainable Development Goals (SDGs). In the past 20 years, more than 7,000 major disasters have impacted all regions of the world, claiming 1.23 million lives and affecting 4.2 billion people, with economic losses estimated at US\$ 2.97 trillion.<sup>1</sup>

*Extreme poverty increased globally in 2020 for the first time since the 1990s, due to COVID-19 and the secondary, cascading impacts of the associated lockdowns and global recession: unemployment, reduced economic growth, decreased productivity, lost education, income reduction and rising food prices.*

OCHA [Global Humanitarian Overview 2021](#)

Disasters affect all nations, with each nation's poorest, most vulnerable citizens – primarily women and girls – impacted disproportionately.<sup>2</sup> Disaster risk reduction (DRR) requires “all-of-society” to work together to reduce risk. Women have a central role in community resilience, and their potential for DRR leadership is not fully utilized. Poorer countries have the highest disaster mortality rates. In comparison, highly developed countries have low mortality rates but higher financial and economic losses.<sup>3</sup> The COVID-19 pandemic's 3.9 million fatalities<sup>4</sup> are joined by economic and societal impacts of a 4.4<sup>5</sup> to 5.2<sup>6</sup> per cent contraction in global gross domestic product (GDP) 2020 and increased global public debt, currently estimated to exceed its post-World War II peak.<sup>7</sup>

In this situation, good governance, specifically good risk governance, has never been as important as it is today, because, at this moment, we are in real danger of not achieving either the Sendai Framework global targets for reducing disaster losses, the Paris Agreement or any of the SDGs. Good risk governance requires imagination,

1 UNDRR, [Human Cost of Disasters: An Overview of the Last 20 Years](#) (Geneva: UNDRR, 2020).

2 OCHA [Global Humanitarian Overview 2021](#) (Geneva: 2021).

3 CRED and UNISDR [Poverty & Death: Disaster mortality 1996-2015](#) (Geneva: 2016).

4 World Health Organization [WHO COVID-19 Dashboard](#).

5 International Monetary Fund [World Economic Outlook Update](#) (Washington DC: IMF October 2020).

6 World Bank [Global Economic Prospects](#) (Washington DC: World Bank Group June 2020).

7 Stephane Hallegatte (Washington DC: World Bank Group, 2020) [Disaster Risk Management during the COVID-19 Crisis and Recovery](#) (Washington DC: World Bank Group, 2020).

common sense, and more than anything determined leadership. And parliaments play a major role in this.

Parliamentarians can shift their governments' focus and strategy from disaster response and recovery to DRR and risk prevention that extends to the local level. Disaster risk reduction can protect and improve social and economic development and strengthen resilience. It is also cheaper and more cost effective than disaster response and recovery. Risk-informed investments can protect against disaster driven global economic shocks.

Without this shift, disasters will continue to reverse economic and development gains, increase humanitarian crises and contribute to political instability.<sup>8</sup> Poverty will rise and nations' social and economic development will decline as losses due to disasters continue to increase. Extreme events cause the equivalent of a global US\$ 520 billion loss in annual consumption, forcing some 26 million people into poverty each year.<sup>9</sup>

The greater the risk exposure and vulnerability of areas and communities, the greater the disaster impacts in human, environmental, developmental and financial terms. In the event of a disaster, money that could have been used for economic and social development programmes is diverted to disaster response and recovery and many economic- and development-related improvements – such as new schools, health care facilities and roads – are destroyed.

Governments have made commitments to DRR internationally through the following accords: the Sendai Framework for Disaster Risk Reduction 2015-2030, the 2030 Agenda for Sustainable Development (Agenda 2030), the Paris Agreement, the New Urban Agenda, and the Addis Ababa Action Agenda. Parliaments must ensure that these commitments are legislated, financed and implemented nationally.

Parliamentarians can increase prosperity, sustain development gains, protect the environment and support achieving the SDGs by reducing disaster risks and their associated social and economic losses.

8 UNDRR, *Global Assessment Report on Disaster Risk Reduction 2019* [GAR 2019](#).

9 Stephane Hallegatte (Washington, DC: World Bank Group, 2017) *Unbreakable: Building the Resilience of the Poor in the Face of Natural Disasters* (Washington, DC: World Bank Group, 2017).



# What is disaster risk reduction (DRR)?

Disaster risk reduction aims at preventing new and reducing existing disaster risk and managing residual risk, all of which contribute to strengthening resilience and therefore to the achievement of sustainable development.<sup>10</sup> DRR addresses the underlying drivers and causes of risk, such as poverty, globalization, rapid unplanned urbanization, inadequate land-use planning, and environmental degradation.<sup>11,12</sup>

The costs of DRR are estimated to be 5 to 10 per cent of response and recovery costs and will save lives and resources. Anything governments invest in DRR will be less than relief and recovery costs. Parliamentarians can advocate for increased spending on DRR with benefit-cost ratio (BCR) analyses of the money to be spent on DRR initiatives and the costs that will then be avoided during disaster response and recovery. For example, research in the farming sector shows that for every US\$ 1 invested in DRR initiatives, the estimated savings was between US\$ 2.75 to US\$ 5 during the response and recovery phases.<sup>13</sup>

*"The estimated cost of building protection for New Orleans, Louisiana against hurricanes and flooding was US\$ 14 billion compared to the US\$ 125 billion in losses incurred due to Hurricane Katrina and the subsequent flooding."*

*Preventive disaster management of extreme natural events* by Ismail-Zadeh & Takeuchi, 2007

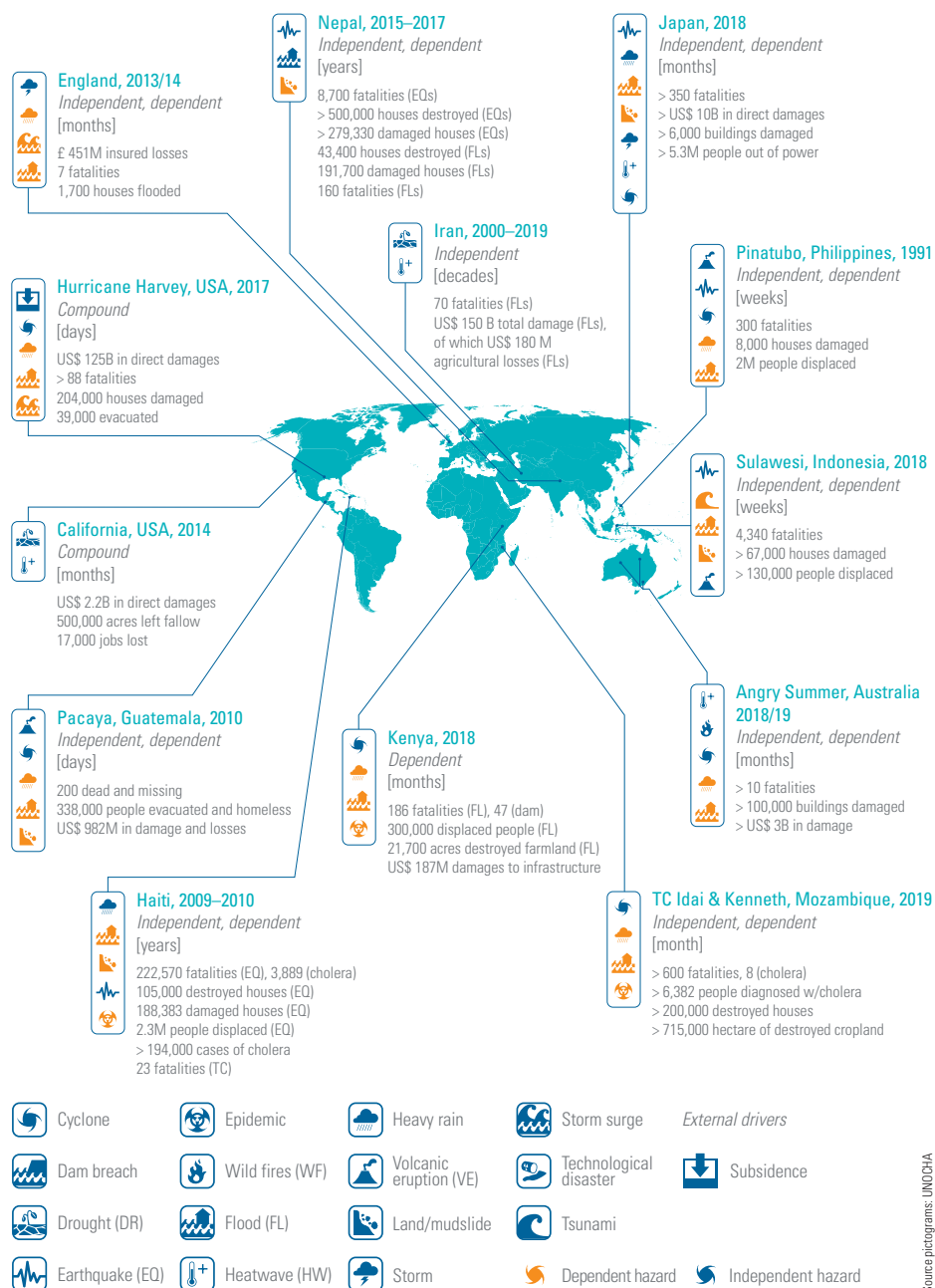
Climate change is increasing the frequency and complexity of natural hazard events that trigger disasters, causing greater loss of lives and livelihoods and weakening the resilience of vulnerable ecosystems and societies.<sup>14</sup> Incorporating DRR into national development and climate change adaptation (CCA) plans builds on existing collaboration and coordination across sectors, improves effectiveness and provides access to funds for implementation.<sup>15</sup>

- 10 United Nations [Report of the Open-ended Intergovernmental Expert Working Group on indicators and terminology relating to DRR](#) (NYC: United Nations, 2016).
- 11 Philip Ireland, [Climate change adaptation and disaster risk reduction: Contested spaces and emerging opportunities in development theory and practice](#) Climate and Development, 2:4 (2010), 332-345.
- 12 DRR examples are planting vegetation to stabilize slopes or using seismic building codes to prevent infrastructure damage and loss to buildings such as hospitals and schools.
- 13 Food and Agriculture Organization, [Disaster risk reduction at farm level: Multiple benefits, no regrets](#) (Rome: FAO 2019).
- 14 Richard Munang, [The role of ecosystem services in climate change adaptation and disaster risk reduction](#) Current Opinions in Environmental Sustainability (2013), 342-345.
- 15 Ibid.

Risk-informed development and CCA initiatives will sustain and increase social, environmental and economic progress towards achieving the SDGs.

To reduce the impacts of complex, interdependent risks, governments and all-of-society will need to work together to anticipate, prevent and reduce the risks of concurrent (defined as independent events occurring simultaneously), and cascading (defined as dependent events, with one event causing or creating another) events. Examples of independent and dependent events occurring simultaneously or in quick succession – straining governments' capacity to manage the increasing social and economic impacts – are presented below (see Figure 1).

**Figure 1. Examples of independent and dependent disasters and their impacts<sup>16</sup>**



<sup>16</sup> De Ruiter and others (2020); OCHA Source documents from Agha Kouchak and others (2014); CFE-DMHA (2010); Date and others (2011); Gorum and others (2013); LeComte (2019); ReliefWeb (2019); Schaller and others (2016). See Annex B for Sendai hazard classifications.

These interdependent hazards are called multi-hazard. These are defined as the multiple major hazards that a country faces which may occur simultaneously or events that occur in a cascade or cumulatively over time with potential interrelated effects. Multi-hazard events are dynamic and unpredictable, requiring investigation of when and where the hazards a country faces could occur and cascade or accumulate over time with potential interrelated effects.<sup>17</sup>

For example, heat waves can worsen the impacts of wild fires and droughts (see Annex B: Hazard classification).

To ensure economic and development gains are protected, risk reduction requires:

- Consultation and cooperation across multiple sectors
- Development and reform of policy and legal frameworks
- Coordination across government departments and between national and subnational governments
- Utilization of public and private expertise and investments
- Allocation of financial and institutional support for DRR implementation, including subnationally
- Collection of scientific and loss data on past and potential events
- Oversight of DRR initiatives and enforcement of DRR related regulations.

<sup>17</sup> UNDRR and International Science Council (ISC) [Hazard Definition and Classification Review Technical Report](#) (Geneva: 2020).

# Parliaments' mandate for DRR

The Sendai Framework calls for parliamentarians to reduce disaster risks and protect their populations by developing new or enhancing existing DRR legislation, creating national and local DRR strategies, increasing financial resources for DRR budgets, and holding governments accountable for DRR actions.<sup>18</sup>

Risk is currently high on national agendas, and public tolerance for the devastating consequences of disasters is decreasing, partly due to the impacts of COVID-19 and the cascading effects of the economic crises it has created. Risk is now everyone's business and responding to disasters after they occur is not enough even if it is done effectively. Parliamentarians will be seen as effective, aware and progressive when championing solutions that prevent and reduce risks.

Parliamentarians can advocate for DRR in their roles as legislators, budget allocators, reviewers and approvers, financiers, overseers of government activities, and constituency representatives. Successful DRR will not be achievable without DRR-specific policies, legislation, budgets and oversight. This section defines parliaments' mandate for DRR, drawing insights from case studies of national and regional parliaments' DRR strategies.

Disaster risk reduction is usually a multi-year investment – a challenge for parliamentarians who must commit to long-term plans with benefits that are not apparent until there is a hazard event or a disaster. However, DRR provides parliamentarians with the opportunity to leave a lasting legacy by contributing to their nation's prosperity and the achievement of the SDGs and climate change targets.

## Legislate

The creation and reform of legislation are powerful parliamentary functions. Legislation translates international commitments into national laws for implementation, legitimizes national DRR strategies, informs regulations and facilitates DRR finance mechanisms, and budgetary allocations. Effective DRR requires legislative and regulatory frameworks that are durable, adaptable and able to support multi-stakeholder inclusion and collaboration.

Parliamentarians can review and amend existing disaster management and sectoral laws to integrate DRR. They can also create new DRR-related laws that can facilitate the shift from

<sup>18</sup> Sendai Framework Paragraphs 27 (e), (i), (h); 48 (h) [The Sendai Framework for Disaster Risk Reduction](#).

managing disasters to managing disaster risks. Amending sectoral laws to include DRR is important for multi-hazard risk reduction as it integrates DRR in key sectors such as health, finance, transportation, agriculture, water, resource extraction and even hazard-specific legislation related to fires, flood and earthquakes.<sup>19</sup> Sectoral legislation can also link DRR with CCA and development planning and implementation, to increase the effectiveness of all initiatives.

Legislation and legislative reform can transfer resources and institutional support to subnational DRR initiatives. This aligns the goals, priorities and targets of key national policies – such as climate change and development – across all levels of government.

Effective legislation requires strong governance that includes clearly identified priorities, well-defined roles and responsibilities, and protocols for areas of jurisdictional overlap. This also supports oversight.

*The impacts of **effective DRR legislation** on ecosystems, infrastructure protection, economic prosperity and people's well-being are clear. Fiji's coral reefs provide habitat, food, tourism dollars (estimated at over 30 per cent of Fiji's GDP) and **free, natural infrastructure protection** as the reefs reduce storm wave power and height. The Fijian Government's ban on plastic bags and polystyrene has made a significant DRR contribution by reducing the plastic on the coral reefs - which supports coral reef preservation and growth.*

Plastic waste associated with disease on coral reefs  
J.B. Lamb et al., Science 359 (6374), 2018

## Oversee

Parliamentary oversight is a key component of successful DRR. Oversight includes policy and legislative evaluation through data collection and reporting, financial reconciliation, cost effectiveness, cost-benefit analyses, periodic reviews, progress monitoring, regulation enforcement and penalty mechanisms.

Accountable and transparent oversight is effective and inspires parliamentarians' and their constituents' confidence and support for DRR initiatives and budgets, especially if economic benefits and societal benefits are both reported and show positive impacts.

Parliamentarians can use their oversight role to evaluate government performance, effectiveness and spend for DRR initiatives, demonstrating the effectiveness and impact of regulation

<sup>19</sup> IFRC/RC [Handbook on Law and Disaster Risk Reduction](#) (Geneva: IFRC/RC 2015).

enforcement and penalties. Reviews give parliaments an opportunity to make recommendations, influence governments to adjust their strategies and programmes to improve performance, align with mandates, incorporate new information – such as environmental, technological and scientific changes – and adjust what is not working. The oversight results can also be used to draft and legislate amendments as required.

Effect oversight requires consistent reporting processes – using standardized data and report formats – so comparisons can be made across initiatives and over time. Many international agreements require nations to submit reports on actions taken and results achieved. For the Sendai Framework, countries report on their progress in implementing global targets and indicators online via the Sendai Framework Monitor.<sup>20</sup> Parliamentarians can use these reports to ensure government compliance with DRR commitments and to promote policy and legislative reforms to enhance compliance.

## Budget and finance

The Sendai Framework calls for disaster risk considerations to be embedded in domestic public financing, including procurement planning, risk sensitive budget reviews and regulatory frameworks that are aligned with DRR standards. The 2020 Financing for Development Forum also calls on member states to develop DRR financing strategies and financial instruments.<sup>21</sup>

### Budget

Parliamentarians allocate, review, approve and amend national budgets; these processes provide key opportunities to integrate DRR funding. They can also participate in and lead discussions to integrate risk reduction into all budgetary processes, promote gender-responsive risk reduction, and allocate DRR funds by sector and sub-nationally. Highlighting or extracting DRR allocated funds from the disaster management budget provides detailed DRR spending data to assess DRR benefits and costs versus disaster response and recovery costs and for oversight. Parliamentarians can use the benefit-cost assessments to champion DRR and enhance allocation of funds for DRR.

### Finance

Disaster risk reduction financing mechanisms ensure that funds are available for DRR. Public investment and private capital are needed

20 UNDRR <https://sendaimonitor.undrr.org> (Geneva: UNDRR, 2016).

21 [Forum on Financing for Development Summary by the President of the Economic and Social Council](#) (NYC: 2020).

for DRR investments at regional and national levels.<sup>22</sup> Development cooperation resources – such as financial aid, private sector finance and investments – can also be used to finance DRR. Resilient infrastructure projects require multiple funding sources.

Parliamentarians can propose, evaluate, amend and support DRR financing mechanisms and innovations – such as green bonds – while avoiding the creation of new risks and providing DRR funding. Parliamentarians have a key role in facilitating and stimulating DRR financing and risk-informed investment.

Risk-informed investment is the application of a risk perspective to all forms of public and private investment. This type of investment considers the multiple and concurrent sources of risk and their potential interactions over the investment period. For example, COVID-19 – a global pandemic – cascaded into an unexpected and unprecedented global economic crisis, demonstrating that disasters cause unsustainable losses and create systemic financial risk. This systemic risk cascades through the financial system, reinforcing inequality and reducing the ability of nations to raise investments for DRR and build resilience.

Risk transfer mechanisms – such as insurance – and risk financing instruments – such as contingent credit mechanisms that provide funds for DRR initiatives both pre-event and during recovery (build back better) – are also needed to manage residual risk.

## Represent

To promote meaningful action on DRR, all stakeholders, including citizens, should be involved in shaping DRR priorities and actions. As elected officials, parliamentarians are responsible for representing all of their constituents and ensuring that DRR policies and plans meet their needs. These plans must include those most vulnerable in disasters: the poor, women, girls, ethnic minorities and persons with disabilities.

Parliaments are also responsible for fulfilling their country's obligations under international agreements, and parliamentarians can ensure that DRR implementation plans represent citizens' needs and concerns.

Parliamentarians can support the development and implementation of DRR frameworks and plans by convening the whole-of-society to enable consultation and participation between all levels of

<sup>22</sup> IFRC [Law and disaster preparedness multi-country synthesis report](#) (Geneva: IFRC 2019).



government, private sector, civil society, the public, academia and technical and scientific experts.<sup>23</sup> A whole-of-society, inclusive approach is a good foundation for creating and prioritizing effective DRR policies and strategies. It also provides an opportunity to inform of and expand risk knowledge for better DRR decision-making.

Parliamentarians can influence policies to reduce existing risks and avoid the creation of new risks by reviewing and developing the legal and financial frameworks required to implement DRR. Parliaments can ensure that their DRR strategies and commitments will be durable and will survive electoral changes by using a non-partisan, holistic approach to developing DRR plans.

## Advocate

DRR is a longer-term, lower-profile process compared to high-profile response and recovery activities. Parliamentary advocacy for DRR is vital because DRR benefits are often not easily seen, occurring over time and not apparent until a hazard manifests itself or a disaster event occurs. A building that stands for years does not demonstrate the benefits of DRR, until a disaster in which it does not collapse and remains usable. Despite DRR being cheaper than disaster response and recovery and reducing the costs of response and recovery, parliaments can be reluctant to allocate resources to DRR as the benefits may not be seen during an election cycle.

Adopting a multi-hazard and multi-sectoral DRR approach across government by removing departmental silos and increasing coordination across all relevant government sectors requires strong advocacy. Successful DRR integration across all of government effectively identifies risks, allocates responsibilities and resources and distributes the associated liabilities across given sectors.<sup>24</sup>

*“Increasing risks from climate hazards and the threat of disasters can be effectively reduced through a whole of nation approach where a strong legal framework is backed by sufficient resources from the national level, where they catalyze action down at the local level.”*

Philippine Senator Loren Legarda, UN Regional Champion for Disaster Risk Reduction and Climate Change, 2020

23 UNDRR [Working with...Parliamentarians](#) (Geneva: UNDRR 2020).

24 UNDRR [Words into Action Developing National Disaster Risk Reduction Strategies](#) (Geneva: UNDRR 2020).

# Ten actions for parliamentarians

## Legislate

1. Create DRR legislation – with clearly defined roles and responsibilities across all of government – after conducting risk and vulnerability assessments and developing multi-hazard and multi-sectoral DRR strategies and policies.
2. Review and amend existing sectoral legislation to integrate DRR that reflects international commitments and includes the latest knowledge, while ensuring that DRR can be adapted to evolving requirements.

## Oversee

3. Ensure that all parliamentary oversight functions and activities consider DRR and risk-informed decision-making, and provide access to sufficient information in standardized, consistent formats.

## Budget and finance

4. Develop and inform DRR financing strategies and financial instruments to fund long-term DRR initiatives – including funds for oversight of data collection, reporting and regulation enforcement – at all levels of government.
5. Integrate and mainstream DRR into public and private investment decisions to deliver risk-informed investment.

## Represent

6. Promote inclusion and an all-of-society approach that ensures citizen engagement in DRR, with a focus on multi-sector consultation and coordination.
7. Foster development of multi-sector scientific, academic and technical agencies and institutions to provide knowledge, advice, oversight and innovation for DRR priorities and initiatives.

## Advocate

8. Advocate that government shifts from an event-centred response and recovery approach to DRR with a multi-hazard approach.
9. Advocate that the data, expertise and experience of national and international agencies and institutions and of other countries with similar hazard and geographic profiles be leveraged to inform DRR frameworks and strategies.
10. Advocate that DRR is integrated into climate change adaptation and development plans and initiatives to increase effectiveness and sustainability.

# How can parliamentarians facilitate DRR?

This section provides information on how to develop DRR policies, legislation, budgets and financial mechanisms, and oversight. It also provides areas where parliamentary advocacy for DRR is needed. Building on the 10 actions identified, examples are given that show how these actions can be adapted to a nation's specific risk profile and geography and implemented at national and regional levels.

Parliamentarians need to be aware of their country's hazards, exposure and vulnerabilities, the three components of risk, as DRR implementation is highly context specific and should be undertaken based on each country's governance structure, DRR priorities and capacities. There is no "one-size-fits-all" model.<sup>25</sup>

## Legislate

### Action

- 1. Create DRR legislation – with clearly defined roles and responsibilities across all of government – after conducting risk and vulnerability assessments and developing multi-hazard and multi-sectoral DRR strategies and policies.**

Effective legislation should:

- Establish DRR mandates
- Define clear responsibilities and accountabilities in governance structures<sup>26</sup>
- Facilitate stakeholder participation in decision-making
- Promote greater investment in risk reduction with financial incentives for DRR initiatives; for example, tax breaks and insurance cost reductions as a result of DRR investments
- Consider potential gender impacts and ensure that initiatives benefit women and men equitably
- Allocate resources for capacity building and targeted DRR investments
- Strengthen accountability for risk creation by public and private sector actors
- Deter risk creation by all members of society by introducing taxes and fines for risk-generating behaviours

25 UNDRR *Words into Action Developing National Disaster Risk Reduction Strategies* (Geneva: UNDRR 2020).

26 UNDP & IFRC *Handbook on Law and Disaster Risk Reduction* (Geneva: 2015) p.9.

- Encourage risk reduction with financial incentives for new technologies and tax breaks for pollution reduction
- Provide resources for subnational and local DRR initiatives, such as land use, water and waste management, and urban planning
- Link DRR to sectoral laws related to sustainable development and climate change.

In Japan, the turning point for strengthening the disaster management system and legislation came in response to the immense damage caused by the Typhoon Ise-wan (Typhoon Vera) in 1959, leading to the enactment of the Disaster Countermeasures Basic Act in 1961. This Act formulates a comprehensive and strategic disaster management system in Japan, including the establishment of the Central Disaster Management Council in 1962 as a national platform for disaster management and risk reduction. Thereafter, the disaster management system and related legislation have been continuously reviewed and revised following the lessons learned from large-scale disasters such as the Great Hanshin-Awaji Earthquake (1995) and the Great East Japan Earthquake and Tsunami (2011). The Japanese Government, in accordance with the Disaster Countermeasures Basic Act, annually submits a report, the White Paper on Disaster Management, to the National Diet. The White Paper includes an overview of disasters that occurred in Japan, various statistical data and disaster management measures taken by the Government. Continuous efforts for improvement of the system, legislation reflecting lessons learned from disasters, as well as the transparency and accountability enhanced by the White Paper, are all playing important roles for building disaster resilience of Japanese society.

The Republic of Fiji consulted with the public, private sector, technical experts, academia and the government ministries and institutions responsible for development, climate change and DRR during a review of all sustainable development, climate change, and DRR policies and laws. This led to the Climate Change Bill that went through two rounds of public consultation and will be enacted in 2021. The comprehensive bill includes CCA, resilient development, governance structures, policy document creation, inventories, assessments, data collection, research, reporting requirements, communications, budgeting, enforcement, oversight, climate displacement and relocation, oceans and climate change, sustainable financing, and private sector transition and engagement. Fiji's climate change targets under the Paris Agreement for greenhouse gas (GHG) emissions and carbon sequestration are also included.

The East African Community (EAC), a regional intergovernmental organization comprising Burundi, Kenya, Rwanda, South Sudan,

Tanzania and Uganda, passed the Disaster Risk Reduction and Management Act (2016),<sup>27</sup> which provides a regional legislative framework for the management and reduction of disaster risk. This Act also creates a mechanism for accountability and fosters coordination and exchange among EAC member states on disaster risk reduction efforts. Furthermore, the roadmap for the implementation of the law includes targets and activities crucial for achieving effective DRR including awareness raising, cross-sectoral and cross-institutional collaboration and capacity development on disaster risk reduction, among others. The law underwent public hearings,<sup>28</sup> enabling public participation in the legislative process and thus increasing the legitimacy of the Act.

## Action

### 1. Review and amend existing sectoral legislation to integrate DRR that reflects international commitments and includes the latest knowledge, while ensuring that DRR can be adapted to evolving requirements.

In 2019, the United Kingdom amended its 2008 Climate Change Act to make long-term GHG emissions reduction targets legally binding, allowing for legal action if targets are missed. An independent advisory body, the Committee on Climate Change (CCC), has been created to advise government on meeting targets, perform independent analyses and monitor progress.<sup>29</sup>

In 2020, the European Parliament voted on the European Climate Law, translating the Paris Agreement commitments into binding clauses. This law explicitly requires EU institutions and member states to undertake continuous progress in enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change. In addition, the European Union's existing legislation, policies and agencies have also been updated to include consideration of DRR and CCA, prioritizing increased cooperation across borders and sectors in all risk management phases for transboundary disaster risks, complex multi-hazard scenarios and emerging risks.<sup>30</sup>

27 United Nations Office for Disaster Risk Reduction [Roadmap for The Implementation of The EAC Disaster Risk Reduction and Management Act, 2016](#) (Nairobi: 2017).

28 East African Community East African Legislative Assembly Committee on Agriculture, Tourism and Natural Resources [Report of the Public Hearings on the EAC Disaster Risk Reduction and Management Bill](#) (Arusha: 2013).

29 Canadian Institute for Climate Choices [Climate Legislation in the United Kingdom](#) (Ottawa: 2020).

30 European Commission [Overview of natural and human-made disaster risks the European Union may face](#) 2020 p.7.

# Oversee

## Action

### 2. Ensure that all parliamentary oversight functions and activities consider DRR and risk-informed decision-making and provide access to sufficient information in standardized, consistent formats.

Oversight activities can occur periodically or at the end of initiatives, depending on their duration. The intervals at which oversight is conducted are the result of a balance between costs, time and the duration of the initiative. Parliaments can make recommendations to government and influence outcomes using the information given through oversight. They can also legislate amendments that improve results, improve governance and better align with mandates.

To facilitate good DRR governance, parliaments should:

- Have clear, strong oversight mandates in DRR legislation, regulations and enforcement
- Ensure transparency and accountability are included in DRR legislation, policies and regulations
- Have complete and timely access to the information on DRR initiatives required for oversight
- Include data and reporting format standards for all DRR legislation to enable DRR assessments and comparisons during oversight activities
- Ensure that opposition and minority parties participate fully in DRR oversight
- Ensure that subnational governments participate in DRR oversight activities in their jurisdiction(s) and areas of responsibility
- Include the perspectives and participation of vulnerable populations – such as women and girls, poor people, ethnic minorities and people with disabilities – in oversight activities
- Conduct a gender analysis during oversight activities
- Manage potential corruption with measures such as legislation that holds officials legally responsible for their actions that create and increase risk and vulnerability
- Be willing to hold government to account for meeting its obligations to DRR<sup>31</sup>.

31 Adapted from IPU [Global Parliamentary Report – Parliamentary oversight: Parliament's power to hold government to account](#) (Geneva: 2017).

Components to include in DRR oversight:

- Clearly defined roles and responsibilities for DRR oversight within all associated departments, agencies, offices and participants
- Clearly defined indicators and measures (targets, milestones and timeframes) for DRR initiatives created that are in place before initiatives begin
- Detailed guidelines for DRR data collection methodologies and reporting criteria
- Consistent data format and detail levels across all DRR initiatives to facilitate comparisons
- Regulatory compliance and enforcement policies, standards and guidelines
- Evaluation of DRR initiatives and results by independent institutions and agencies
- Adequate funding for monitoring, reporting, evaluating, adjusting, improving and enforcement of DRR measures at all required levels: national, subnational and local
- Ability to respond to DRR evaluations with programme corrections, adjustments and alterations
- Budgetary oversight with review of DRR funds allocated versus funds spent, where funds were spent, the benefit-cost analysis of funds spent and objectives achieved, and data on all DRR policy areas disaggregated by sex and other social characteristics, e.g. age, ethnicity, disability.

The United Kingdom's 2008 Climate Change Act specifies the government departments responsible for implementing the climate change policies and GHG emission strategies and meeting targets. The Act has clear and stringent oversight. The Secretary of State must table an annual statement on the United Kingdom's GHG emissions in Parliament. The CCC is mandated to prepare and present progress reports, annual reports on carbon budgets implementation and a bi-annual CCA report. The Secretary of State is then required to present Parliament with a response to the CCC's reports. The Act also granted to government adaptation reporting powers, allowing Parliament to require that certain organizations report on their climate change adaptations.

In 2020, when the European Parliament voted on the European Climate Law, members of the European parliament (MEPs) voted to reject proposals that weakened the commitment to GHG emission reduction, increasing it to a 60 per cent reduction by 2030 against 1990 levels and stating that all EU countries should be at net zero emissions by 2050, making the targets binding. They also required the European Commission to submit a 2040 climate target proposal, create a European Climate Change Council – an independent scientific

body to scrutinize EU climate policies and targets – and table an EU carbon budget by December 2021 that details the remaining carbon emissions threshold to keep within the Paris Agreement’s temperature requirement. Member states will also have to develop and implement adaptation strategies to strengthen resilience and reduce vulnerability to climate change.

## Budget and finance

### Action

#### **3. Develop and inform DRR financing strategies and financial instruments to fund long-term DRR initiatives – including funds for oversight of data collection, reporting and regulation enforcement – at all levels of government.**

Components of DRR financing strategies include:

- National and subnational funding mechanisms for DRR initiatives at all levels that are inclusive and gender-responsive
- Taxation revenue related to pollution and environmental damage allocated to DRR
- DRR and DRR-investment incentives
- Pollution and environmental degradation penalties and revenue from fines levied allocated to DRR
- Ministry of Finance involved with and/or champion of DRR financial components
- DRR funds clearly identified and managed through a special fund(s) at the national or subnational level
- DRR funds embedded in sectoral climate adaptation and development programmes.

Disaster risk reduction funds can be allocated to a special fund or embedded as DRR funds in sectoral climate adaptation and development programme budgets in health, agriculture, education, environment, finance, infrastructure, transportation, tourism, water, etc.<sup>32</sup>

Private capital and expertise can be accessed with public private partnerships for infrastructure projects, insurance and funding mechanisms, such as sovereign bonds linked to GDP. Other novel mechanisms for finance and domestic resource flows are disaster investment funds and risk pooling. These innovative financial mechanisms can provide much needed funds for DRR investment at regional and national levels.<sup>33</sup>

<sup>32</sup> UNDRR *Global Assessment Report of DRR 2019* p.27 [GAR 2019](#).

<sup>33</sup> IFRC [Law and disaster preparedness multi-country synthesis report](#) (Geneva: IFRC 2019).



The Republic of the Philippines was one of the first countries to integrate and localize DRR across governments. The 2010 Disaster Risk Reduction and Management Act provides a comprehensive, multi-sectoral, community-based approach to DRR with a governance framework that integrates local and subnational governments and provides them with funding. This enables customized, effective community-level DRR and recognizes the importance of local and indigenous knowledge for resiliency and successful DRR implementation. The Act also created subnational DRR units for data management and oversight activities. Ninety per cent of the provinces have resilience activities in their development plans to reduce vulnerability.<sup>34</sup> The Act also created the Local Disaster Risk Reduction and Management Fund (LDRRMF), requiring local governments to set aside 5 per cent or more of annual revenue from regular sources into a LDRRMF for the regional councils to use for DRR, prevention, preparedness and quick response for government departments such as Agriculture, Health, Education, Public Works and Transport. Unspent funds are allocated for DRR activities for use within five years.<sup>35</sup>

Beginning in 2012, the Republic of Fiji implemented user-pay taxation to fund DRR. By 2018, Fiji had collected US\$ 115 million through two tax acts: Service Turnover Tax Act (2012) and Environment and Climate Adaptation Levy (ECAL) Act (2015). These funds are used for resiliency and sustainable development initiatives. The ECAL is a 10 per cent tax on tourism activities, luxury vehicles, and high electrical demand items such as household appliances, smart phones and air conditioners. It also levies surcharges on low-density plastic bags and bans high-density plastic bags and polystyrene. The funds raised are spent through the ECAL Fund and the Climate Change Relocation Trust Fund. Over 100 climate change and ecosystem and biodiversity conservation projects from the 20-year National Development Plan have been financed.<sup>36</sup>

In the British Virgin Islands, the House of Assembly passed the Virgin Islands Climate Change Trust Fund Act<sup>37</sup> in 2015, creating the first financing framework for climate adaptation in the Caribbean. The fund uses domestic and international financial resources to support disaster risk reduction and response to climate-associated disasters. The Act prescribes a clear role for parliamentarians in the review, and oversight of climate adaptation policies and national budgets. It also calls for a broad stakeholder consultation process as well as

34 GFDRR *Comprehensive Financial Protection in the Philippines: Building a resilient future* (Washington DC: World Bank Group, 2017).

35 OECD *Common Ground Between the Paris Agreement and the Sendai Framework: Climate Change Adaptation and Disaster Risk Reduction* (Paris: OECD Publishing, 2020).

36 The Honourable Jone, Minister for Infrastructure, Transport, Disaster Management and Meteorological Services Parliamentary Debates September 5, 2019 [www.parliament.gov.fj/wp-content/uploads/2019/09/Thursday-5th-September-2019.pdf](http://www.parliament.gov.fj/wp-content/uploads/2019/09/Thursday-5th-September-2019.pdf).

37 BVI 2015 “*Virgin Islands Climate Change Trust Fund Act*”.

a multi-sector approach comprising infrastructure, health and social development, education, business, natural resources and climate change. Furthermore, after Hurricane Irma struck the British Virgin Islands causing over US\$ 2.6 billion of loss and damage in 2017, the House of Assembly of the Virgin Islands established the Recovery and Development Agency in 2018<sup>38</sup> to work with ministries under the disaster recovery plan. The Agency has put forward a policy framework to support vulnerable populations, established financial tools to fund DRR efforts and acknowledged a multi-hazard approach in DRR investments. For instance, in 2019, the Government of the British Virgin Islands modernized its Multi-Hazard Early Warning System, which also provides the science base for risk-informed investment in sectors such as agriculture and tourism. Another mechanism is the Livelihood Protection Policy (LPP), a micro-insurance for vulnerable communities such as fishermen, farmers, taxi operators and other small business owners. The policy is implemented by the Department of Disaster Management and the Ministry of Natural Resources and Labour.

### Localization

In Canada and the United States, subnational entities have been a key driver of climate action, often leading the way with significant framework laws, such as California's Global Warming Solutions Act. Subnational governments have important powers that relate to the implementation of climate action. They often have responsibility for housing, local transport, energy, water and disaster risk management.

State and Trends of Carbon Pricing  
World Bank, 2017.

## Action

### 4. Integrate and mainstream DRR into public and private investment decisions to deliver risk-informed investment.

DRR can be financially incentivized by:

- Ensuring all types of public and private investments are risk informed: risks are identified and considered through the lifetime of the investment, accompanied by DRR measures
- Mandating that new infrastructure project bids account for disaster and climate risk
- Integrating DRR into the restoration and revitalization of physical infrastructure and socio-economic systems

<sup>38</sup> Government of the Virgin Islands [Virgin Islands Recovery and Development Agency Act \(2018\)](#).

- Demonstrating cost savings generated by DRR initiatives as a function of the losses avoided in response and recovery expenditures<sup>39</sup>
- Intergovernmental or government grants to an individual or a company
- Personal or company tax credits and/or rebates
- Subsidies
- Discounts on prices or insurance premiums
- Conditional cash transfers or vouchers
- Bonds and sureties
- Access to concessional loans or credit
- Rebates on fees for development approvals and services.<sup>40</sup>

The 2020 EU Taxonomy Regulation introduced new rules to define green finance and sustainable investments to prevent unsubstantiated claims of products being environmentally friendly or “green washing”. The regulation establishes the EU taxonomy for environmentally sustainable activities, a classification system that provides definitions to companies, investors and policymakers on which economic activities can be designated environmentally sustainable. This regulation aims to increase companies’ investment in sustainable practices, target and increase green investments and to protect the environment by reducing and removing risk-inducing investments. It also mandates the European Commission to define environmentally harmful activities. The regulation has six environmental and DRR objectives: climate change mitigation, climate change adaptation, sustainable use and protection of water and marine resources, transition to a circular economy including waste prevention and increasing uptake of secondary raw materials, pollution prevention and control, and the protection and restoration of biodiversity and ecosystems.<sup>41</sup>

In 2017, Fiji was the first emerging nation to issue its own sovereign Green Bond, raising US\$ 50 million, to support climate change mitigation and adaptation. Green bonds are fixed income, liquid financial instruments used to raise funds dedicated to climate mitigation, adaptation, and other environment-friendly projects as defined in the Green Bond Principles.<sup>42</sup>

39 UNISDR *Build Back Better in recovery, rehabilitation and reconstruction. Consultative Version* (Geneva: UNISDR, 2017).

40 Asian Development Bank *Incentives for Reducing Disaster Risk in Urban Areas* (Manila: ADB, 2016).

41 European Commission *EU taxonomy for sustainable activities* (Geneva: EC, 2021).

42 International Capital Market Association (ICMA) *Green bond principles* (Zurich: ICMA, 2017).

# Represent

## Action

### 5. Promote inclusion and an all-of-society approach that ensures citizen engagement in DRR, with a focus on multi-sector consultation and coordination.

A multi-sector, multidisciplinary consultative approach to DRR development takes longer but produces better results that are informed by experts and supported and adopted by the participants.

Parliamentarians can promote inclusion and a whole-of-society approach with the following actions:

- Hold public hearings on DRR
- Create DRR committees/panels that educate, monitor, and promote DRR
- Educate one another, parliaments, the media and constituents on DRR
- Expand risk knowledge for better DRR decision-making
- Champion local knowledge and local expertise, emphasizing groups that are under-represented, vulnerable and/or marginalized
- Convene panels of experts
- Involve vulnerable populations to incorporate their needs into DRR
- Create multi-stakeholder committees – including women-led committees – to participate in policy development
- Convene awareness-raising meetings for national and subnational sectors potentially affected by multi-hazard and systemic risk events
- Review existing policies and legislation
- Consider new policies and legislation.

The 2019 European Green Deal is a comprehensive “all-of-society” policy package addressing clean energy supply, industry innovation, consumption, infrastructure, transport, food and agriculture, construction, taxation, climate change adaptation, sustainability financing instruments, industrial transition and innovation, the circular economy, agriculture, biodiversity and social benefits. It provides a crucial opportunity to build a resilient future by integrating preventive actions and risk-informed policies, funds, strategies and investments in the EU and member states. It includes investing in infrastructure resilience, increasing local DRR measures, exploiting CCA and DRR synergies in adaptation plans, risk-informed sustainable financing, better data collection and analysis, and capacity building.<sup>43</sup>

43 UNDRR *Europe's opportunity to manage risk and build resilience: Recommendations to the European Green Deal* (Geneva: UNDRR, 2020).

In 2009, Canada established the Platform for Disaster Risk Reduction. The Platform is nationally overseen and led – with more than 700 members representing the subnational and national public sector, scientists, academia, the public, civil society, indigenous people and private sector – and provides a whole-of-society approach to reducing risk. Canada's Platform on DRR hosts a National Roundtable for DRR in different geographic locations annually to support whole-of-society participation and provide opportunities to discuss domestic implementation of the Sendai Framework. Anyone in Canada is allowed to join the Platform and participate in the roundtables. Also available is GCcollab for online information sharing between academic and public-sector communities. All users can browse content, network, share information, collaborate and support stakeholders with knowledge and information that reduces the risks and impacts of disasters and the vulnerability of Canadians. Membership is unlimited and free.

## Action

### **6. Foster development of multi-sector scientific, academic and technical agencies and institutions to provide knowledge, advice, oversight and innovation for DRR priorities and initiatives.**

Credible, transparent and current information on hazards, exposure and vulnerabilities is required to inform CCA, development and DRR planning. Risks need to be identified, measured and tracked. Scientific and technical expertise provides knowledge management, credibility and support for DRR policy and legislation development, regulations, implementations and oversight.

In 2011, the United Kingdom created the Natural Hazards Partnership (NHP), a collaboration between 12 technical and scientific agencies and five government partners to: exchange natural hazard expertise and best practices across sectors, collect data, conduct hazard vulnerability studies, advise government, and to create clear, consistent public-hazard communications and daily early warning bulletins. The NHP has improved stakeholder coordination, reduced duplication and is a “one-voice” approach for DRR, ensuring advice and communications are coordinated and consistent.<sup>44</sup> The National Meteorological Service (Met Office), a NHP member, takes the lead on DRR, supporting the UK and international organizations with data, research and best practices in technical collaborations.<sup>45</sup>

In 2012, the Philippine Department of Science and Technology (DOST) created Project NOAH (Nationwide Operational Assessment

44 OECD [Toolkit for risk governance: The UK's natural hazard partnership](#) (Geneva, 2019).

45 Hemingway & Gunawan [The Natural Hazards Partnership: A public-sector collaboration across the UK for natural hazard disaster risk reduction](#). *International Journal of Disaster Risk Reduction*, Vol. 27, 2018 pp. 499-511.

of Hazards), a multidisciplinary research centre. NOAH used international expert volunteers and collected data to create low-cost, localized maps of potential hazard impacts and vulnerabilities for communities to enable evidence-based DRR decision-making.

*Access to scientific and technical expertise and advice can be inexpensive and easy and is a powerful component of DRR. **OpenStreetMap (OSM)** is a global community of more than one million mappers who work mostly as **volunteers** to create **free and open maps** online. These maps can be accessed and downloaded from the OSM portal. Simple-to-use tools are also available to enable communities to produce detailed municipal base maps that can support local governments in mapping their hazard vulnerabilities and creating their DRR strategies. The OSM training familiarizes participants with OSM's data and tools. Volunteer OSM mappers help to create data for emergency preparedness and other development challenges.*

[www.openstreetmap.org](http://www.openstreetmap.org)

## Advocate

### Action

#### **7. Advocate that government shifts from an event-centred response and recovery approach to DRR with a multi-hazard preventive approach.**

Parliamentarians can support a national shift towards DRR by:

- Representing and protecting their constituents by raising awareness for local disaster, climate and development risks nationally for inclusion in DRR policies and strategies
- Educating themselves and their constituents on potential hazards and DRR strategies
- Forming national cross-sectoral/ministry working groups to improve DRR coordination
- Focusing on the social and economic losses of disasters on constituents, especially the most vulnerable and marginalized
- Creating scientific and advisory entities to address DRR requirements and priorities
- Identifying areas where DRR initiatives would reduce disaster risks and impacts
- Prioritizing DRR initiatives at national, subnational and local levels
- Championing national DRR policies, strategies and funding
- Fostering cooperation across all government levels by integrating

- and aligning DRR initiatives with localized solutions, such as land-use regulations and building-code improvements
- Highlighting how DRR lessens disaster impacts, costs and losses, reducing response and recovery costs
- Introducing DRR resolutions
- Showing that DRR is more cost effective than disaster response and recovery
- Advocating for DRR integration into CCA and development plans.

Education on the benefits of DRR may be required across all levels of government, institutions, and agencies. This could be in the form of email campaigning with hyperlinks to resources available online, creating a national committee or task force, convening meetings with DRR specialists and technical experts to educate attendees on the benefits of DRR.

### UNDRR Parliamentary Strategy

In 2019, UNDRR adopted a new Parliamentary Strategy to catalyse Parliamentary engagement in the implementation of the Sendai Framework. To prevent new and reduce existing disaster risk, and build resilience through legislative action, UNDRR works with parliamentarians and partners in four key areas: (1) advocate for legislative action, (2) conduct research, engage in knowledge sharing, (3) develop tools to provide normative guidance, and (4) capacity development. These four areas of engagement are mutually reinforcing and form a feedback loop. Monitoring and reporting captures the impact of the strategy through the UNDRR Annual Report, the Secretary-General's Report and via various UNDRR-managed platforms and information dissemination channels including the UNDRR website, PreventionWeb, and UNDRR social media accounts.

The IPU is a key partner for UNDRR in taking the goals of the strategy forward. UNDRR also works with ParlAmericas and the EU Parliament, as well as several individual parliamentarians who have taken a lead role in advocacy for risk reduction and prevention. Achievements include the development of a Parliamentary Protocol by UNDRR and ParlAmericas in 2019 and integration of disaster risk into legislative and regulatory changes related to sustainable financing in European Union region. Parliamentarians from across the globe furthermore continue to play a key role in the Global Platforms, the global flagship event on disaster risk reduction.

In 2008, Peru introduced Works For Taxes, which mobilized private-sector investment and expedited public works infrastructure, especially at the subnational level, where funds and public-sector capacity are limited. The tax scheme allowed Peru to address some of the public-sector infrastructure development constraints: lack

of technical capacity, quality of feasibility and investment studies, and lower costs and shorter timelines. Using this taxation strategy, private companies finance public works projects and, after project completion, the company's costs are audited and verified. These costs can then be offset against their future tax payments – up to 50 per cent of annual income tax balances. To further encourage DRR, Parliament passed the Sanitation Sector Modernization Law (2013), requiring water utilities to spend 1 per cent of revenue received from water tariffs for climate change adaptation, natural infrastructure, and watershed conservation and to include these in their budgeting and planning processes. In close partnership with SUNASS – the national sanitation and water utility regulator – local and regional governments, water utilities, land users and civil society collaborated to develop effective nature-based solutions – such as green infrastructure projects – and conservation and sustainable management of ecosystems to secure and protect water supplies and reduce the risk of flooding and landslides. By 2020, investment in nature-based solutions is at US\$ 300 million across 209 projects.<sup>46</sup>

## Action

### **8. Advocate that the data, expertise and experience of national and international agencies and institutions and of other countries with similar hazard and geographic profiles be leveraged to inform DRR frameworks and strategies.**

Parliamentarians can develop relationships with national and international agencies and institutions and their counterparts in other countries. They can request information on the strategies and experiences of parliamentarians in countries with similar risk profiles and geography and enlist the extensive expertise and resources of international agencies and institutions. When available, parliaments should use existing data that has been disaggregated by sex and other social characteristics – e.g. age, ethnicity, disability – and leverage existing resources that include gender and inclusion perspectives.

In 2017, Fiji pioneered a Climate Vulnerability Assessment (CVA) – with the support of the World Bank and the Global Facility for Disaster Reduction and Recovery (GFDRR), and input from other small island developing states – to analyse and assess vulnerabilities to climate change, potential economic losses, and the effects on national development plans.<sup>47</sup> It included projections of medium- to long-term impacts from hazard risks and actual events on the economy,

46 OECD [Common Ground Between the Paris Agreement and the Sendai Framework: Climate Change Adaptation and Disaster Risk Reduction](#) Chapter 5 (Paris: OECD, 2020).

47 World Bank Blogs [Adapting Fiji's development strategy to climate change](#) (July 19, 2018).



livelihoods, poverty levels, health and food security.<sup>48</sup> Infrastructure and asset inventories were also conducted. Innovative analyses included modelling using Fiji's Road Authority database to assess the transportation assets that would have high economic losses. A climate adaptation and risk resilience investment plan, with costs, timelines and prioritized DRR strategies, was also created.

In 2018, with the support of World Bank Wealth Accounting and the Valuation of Ecosystem Services Secretariat (WAVES), Natural Capital Accounting (NCA) was introduced in the Republic of the Philippines to ensure that environmental impacts are considered when determining policy and legislation as NCA values ecosystems and the environment as assets versus conventional accounting which only values built assets. The Philippines is reviewing ecosystems, conducting technical and policy analyses and collecting natural-resource data for asset valuation. Preliminary physical and monetary asset accounts have been produced for gold, copper, nickel and chromium, and data collection is underway for mangrove accounts.<sup>49</sup>

## Action

### 9. Advocate that DRR is integrated into climate change adaptation and development plans and initiatives to increase effectiveness and sustainability.

Advocacy for inclusion of DRR into climate change adaptation and development plans and initiatives should focus on how:

- Risk-informed CCA and development initiatives are more effective and sustainable
- DRR reduces risk exposure and vulnerability, which contributes to poverty alleviation and sustainable development
- DRR can reduce the number of people driven into poverty after a disaster
- DRR lessens disaster costs and losses, increasing availability of funds for development
- DRR can increase protection for vulnerable, marginalized populations
- DRR can address the disproportionate impact of disasters on women and girls
- DRR reduces government spend on disaster response and recovery
- DRR has a better return on investment than disaster response
- Risks and their impacts are reduced with DRR
- DRR contributes to achieving the SDGs and climate change targets.

48 World Bank & GFDRR *Climate Vulnerability Assessment Making Fiji Climate Resilient* (Geneva, 2017).

49 WAVES *Country Update Philippines* 2019 [www.wavespartnership.org/en/philippines](http://www.wavespartnership.org/en/philippines).

Encouraged by the introduction of legislation by parliamentarians in the Philippines, such as the Climate Change Act (2009) and Renewable Energy Act (2008), the Philippines integrated DRR into its development planning in 2010 and created a DRR governance framework, priorities and data-reporting standards. The 2017-2022 Development Plan ensures the inclusion of DRR in new development plans and includes nationwide climate and disaster vulnerability and risk assessments and national oversight. The governing body, the National Economic and Development Authority (NEDA) has included DRR in the national and regional plans and provides oversight for all DRR implementations in these plans. The 2011-2028 National Disaster Risk Reduction and Management Plan (NDRRMP) mainstreams CCA into national and local plans, programmes, and budgets. Initiatives include early warning systems, increasing infrastructure resiliency, enhancing community-based scientific DRR and CCA assessment, hazard and risk mapping, analysis and monitoring. In 2015, the Philippine parliament passed the Atmospheric, Geophysical and Astronomical Services Administration Modernization Act (PAGASA), which integrated DRR, CCA and water resources management into socio-economic development and land-use planning nationally and locally.<sup>50</sup>

Ghana's agriculture sector generates 20 per cent of GDP and employs half of the active labour force. Agriculture is the primary livelihood for the country's poorest population. Smallholder subsistence farm holdings contribute approximately 80 per cent of total agricultural output. Ghana's Ministry of Food and Agriculture has been active in aligning CCA and DRR policies into sectoral policies for agriculture, focusing on institutional capacity for research and development, climate-resilient cropping systems, water efficient irrigation and risk transfer. Parliamentarians approved the National Climate-Smart Agriculture and Food Security Action Plan 2016-2020 to enhance synergies between DRR and CCA in Ghana and increase farmers' resilience to the negative impacts of climate change. The Plan outlines programme areas where CCA and DRR are aligned – developing crop varieties and livestock breeds that are tolerant to flooding and droughts, diversifying land use and enhancing farmers' resiliency to droughts and floods – and the importance of institutionalising weather-related risk transfer schemes. The strategy highlights how climate-smart agriculture can contribute to improved land use and socio-economic development in the high forest zones and cocoa-growing areas.<sup>51</sup>

50 Atmospheric, Geophysical and Astronomical Services Administration Modernization Act Section 4(c) [www.officialgazette.gov.ph/2015/11/03/republic-act-no-10692](http://www.officialgazette.gov.ph/2015/11/03/republic-act-no-10692).

51 OECD *Strengthening Agricultural Resilience in the Face of Multiple Risks* (Paris: OECD, 2021).

# When to act: NOW

*Expenditures for prevention and preparedness are measured in billions of dollars, the cost of a pandemic in trillions. It would take 500 years to spend as much investing in preparedness as the world is losing due to COVID-19.*

*A World in Disorder, 2020  
Global Preparedness Monitoring Board*

Parliamentarians are well positioned to legislate DRR, oversee DRR initiatives, allocate DRR funds in national budgets, influence DRR integration and policies, and advocate for DRR initiatives. DRR yields benefits far beyond their costs and also reduce the impacts of hazard events, and increase resiliency. By focusing on disaster response and recovery, parliaments are missing an opportunity to provide their nation with the tools to reduce the number of disasters, to minimize the financial and social impacts of disasters and to increase the resilience of their constituents.

After any disaster event there is a window of opportunity during which the public and parliaments have been exposed to disaster and see the need for something to be done to prevent further disaster losses. During this time, they will be inclined to support DRR policies and legislation, organizational and institutional reform, and budget allocations.<sup>52</sup> As the costs of disaster response and recovery increase, there is greater interest in avoiding further costs and to prevent future disasters. Parliamentarians can seize this opportunity and legislate DRR integration across all of government, allocate funds for DRR, improve oversight of existing initiatives, establish dialogues and committees to assess risks and make DRR recommendations, and introduce build back better principles into the recovery process. Parliamentarians can also expect multi-partisan support for including DRR during this period. They can also use this window to mandate, facilitate and fund DRR at subnational and local levels where DRR initiatives are most effective.<sup>53</sup>

The COVID-19 pandemic has clearly demonstrated how global interconnectivity results in increased impacts and multi-hazard risks. With the cascading impact of a 'health disaster' on the global social, economic and financial system, COVID-19 is a textbook example of systemic risk. The development and legislating of recovery packages

<sup>52</sup> Birkman et al. *Extreme events and disasters: a window of opportunity for change? Analysis of organizational, institutional and political changes, formal and informal responses after mega-disasters* Nat Hazards 55 (2010), 637–655. <https://link.springer.com/article/10.1007/s11069-008-9319-2>.

<sup>53</sup> Ibid.

and the funds being allocated for recovery have given parliamentarians around the world an opportunity to see the interconnected and cascading impacts of disasters and to consider how much cheaper prevention and risk reduction would have been. This opportunity can be seized by parliamentarians to advocate for greater DRR and to hold governments accountable for how they are managing disaster risks. Below are some examples of opportunities for action.

### **Reduce public debt**

Poverty and public debt have both increased dramatically: public debt is currently higher than it has been since immediately post World War II, as the costs incurred because of COVID-19 are increasing. Before the COVID-19, nearly half of low-income and least developed countries were at high risk of, or already in, debt distress. In the first half of 2020, global remittances, a critical financial resource for many countries, contracted sharply.<sup>54</sup> This was occurring as countries needed an increase in resources to create COVID-19 fiscal recovery packages, thus exacerbating pre-existing economic challenges. While public debt is increasing in many countries due to the pandemic, effective DRR can help reduce overall public debt.

Disaster risk reduction offers the following opportunities to reduce public debt:

- DRR investment will prevent hazard events from becoming disasters and minimize their impacts, therefore reducing public spending by avoiding the high costs of disaster response and recovery.
- “Build back better” initiatives will reduce both the very costly impacts of disasters on infrastructure and the wider impacts on society
- DRR will reduce losses and protect development gains – which means less money spent on: replacing physical and economic losses, re-investing in development programmes to return to pre-disaster development levels or to increase development levels.

### **Integrate DRR into development and CCA plans**

The current increase in poverty rates clearly shows the link between disasters and increased poverty. Now is the time to advocate for risk-informed development and CCA strategies to maintain current development gains, minimize economic losses, reduce poverty and work towards achieving the Paris Agreement and SDG commitments. Increased participation and representation of women and other vulnerable groups in CCA and development plans that integrate DRR will create inclusive, gender-responsive societies – reducing risks for all.

<sup>54</sup> OCHA [Global Humanitarian Overview](#) 2021.

## **Integrate DRR across all of government**

COVID-19 has demonstrated the need to integrate DRR throughout government. The typical approach of one department, ministry or agency managing disasters was not effective or relevant. Health, finance, supply/procurement and employment sectors very quickly became “leaders and decision makers” while traditional first responders had a limited role. It is currently an opportune time for parliamentarians to advocate for a multi-hazard, whole-of-government, coordinated approach to DRR as recent experience demonstrates the value of a prevention-first approach.

## **Localization**

COVID-19 has forced increased cooperation and collaboration between all levels of government and has demonstrated that DRR solutions, implemented locally under national guidelines and policy setting, are necessary, possible and even desirable. Health care and vaccination implementation are good examples of this.

DRR localization offers:

- Access to local knowledge
- Access to local networks
- Access to labour with costs borne by municipal or regional budgets versus national
- Faster implementation as there are resources available “on site.”


Parliamentarians can suggest the creation of intergovernmental networks, committees or forums to look at areas where national governments could support subnational DRR strategies, align priorities and create funding mechanisms.

## **Develop data standards, collect and utilize data to inform national DRR strategies**

Parliamentarians can begin discussions with academia, international institutions and agencies about data management and analyses. Better data enables evaluation, modelling, prioritization, and oversight functions and improves the financial arguments for CCA and DRR. Parliamentarians could also make sure that any DRR policies and legislation proposed are required to provide evidence-based information to assess progress towards goals, which can foster support in parliament.

## **DRR policy and legislation review**


Parliamentarians have an opportunity right now to suggest that both disaster management and sectoral legislation be reviewed and



evaluated as nations' experiences with the global pandemic, the climate emergency and the financial crises can be used to identify gaps in the policies and legislation.

Parliamentarians can catalyse the collection of information from multiple stakeholder groups through committees, public hearings and other parliamentary processes regarding gaps and suggested revisions. Climate change and development policies and legislation could also be reviewed and integrated into DRR framework discussions. All documents should align with international agreements on DRR, climate change, development, financing and urban development. Subnational policies and legislation should also be reviewed for alignment with national and international goals and priorities.

Parliamentarians have a unique opportunity to change the world by advocating for DRR: more prevention than response. Currently, COVID-19 – a global pandemic – is ongoing and has cascaded into another more severe disaster, a global economic crisis. This has given the world an understanding of the future of interconnected, interdependent, multi-hazard risks and their potential impacts. There has never been a better time to be heard and to use the parliamentary mandate to advocate, legislate and fund DRR to create a safer, more prosperous existence for all than now.



# Annex A: Glossary

**The definitions have been taken from the** UNDRR and International Science Council (ISC) (2020) *Hazard Definition and Classification Review Technical Report* **unless otherwise specified.**<sup>55</sup>

**Cascading disasters:** Cascading disasters are extreme events, in which cascading effects increase in progression over time and generate unexpected secondary and tertiary events of strong impact. Also referred to as compound disasters.

**Cascading events:** Cascading events could be: (1) extremes that occur simultaneously or successively; (2) extremes combined with background conditions that amplify their overall impact; or (3) extremes that result from combinations of “average” events. Examples would include high sea-level rise coincident with tropical cyclones, or the impact of heat waves on wildfires. Also referred to as compound events.

**Cascading failure:** Failure in a system of interconnected parts in which the failure of a part can trigger the failure of successive parts.

**Cascading risk:** Any risk can potentially cascade or compound, that is, one or more hazard event(s) precipitate subsequent risks and events. In some cases, this process may be cut short early enough; in others, it continues long enough to cause multiple (component) events, compounding the risks and increasing the potential for a disaster event. Compound risk is a special category of climate extremes, which result from the combination of two or more events, which are “extreme” either from a statistical perspective or associated with a specific threshold. Also referred to as compound risk.

**Climate change:** A change of climate that is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.<sup>56</sup>

**Climate change adaptation:** Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.<sup>57</sup>

<sup>55</sup> UNDRR and International Science Council (ISC) Hazard Definition and Classification Review Technical Report. (Geneva: 2020). Citing the Report of the Open-ended Intergovernmental Expert Working Group on indicators and terminology relating to DRR.

<sup>56</sup> United Nations Framework Convention on Climate Change (UNFCCC) Glossary of climate change acronyms and terms. <https://unfccc.int/process-and-meetings/the-convention/glossary-of-climate-change-acronyms-and-terms>.

<sup>57</sup> Ibid.

**Climate change mitigation:** A human intervention to reduce the sources or enhance the sinks of greenhouse gases. Examples include using fossil fuels more efficiently, switching to solar energy or wind power, improving building insulation, and expanding forests and other natural “sinks” to remove more carbon dioxide from the atmosphere.<sup>58</sup>

**Concurrent disasters:** Two or more unrelated events that occur at the same time, with neither one causing the other. For example, COVID-19 occurring at the same time as locust swarms.

**Contingent credit mechanism:** A contingent financing line that is a form of disaster bridge financing which provides immediate liquidity to countries to address shocks related to natural disasters and/or health-related events. These often come with DRR financing provisions and conditions. A common form is a Catastrophe Deferred Drawdown Option (CAT DDO).<sup>59</sup>

**Disaster:** A serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts.

**Disaster management:** The organization, planning and application of measures preparing for, responding to, and recovering from disasters. Sometimes referred to as Emergency Management but this term can also include hazardous events that do not result in the serious disruption of societal functioning, as does a disaster.

**Disaster prevention:** Activities and measures to avoid existing and new disaster risks. Prevention aims at reducing vulnerability and exposure. Examples include dams or embankments that eliminate flood risks, land-use regulations prohibiting settlement in high-risk zones, seismic engineering designs that ensure the survival and function of critical buildings during earthquakes, and immunization against vaccine-preventable diseases.

**Disaster risk:** Risk that reflects the concept of hazardous events and disasters as the outcome of continuously present conditions of risk. Disaster risk comprises different types of potential losses, which are often difficult to quantify. Nevertheless, with knowledge of the prevailing hazards and the patterns of population and socio-economic development, disaster risks can be assessed and mapped,

<sup>58</sup> Ibid.

<sup>59</sup> World Bank [Catastrophe Deferred Drawdown](#) (Washington, DC: World Bank Group, 2018).



in broad terms at least. Disaster risks are related to the potential for sudden or slow-onset natural or human-made events with adverse consequences (e.g. earthquakes, floods, large-scale cyber incidents, terrorist attacks).

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

**Disaster risk management:** The application of disaster risk reduction policies and strategies to prevent new disaster risk and intended to reduce existing disaster risk, manage residual risk, contribute to the strengthening of resilience, and reduce disaster losses. Sometimes referred to as disaster risk reduction management. Please note some entities use this term for the whole disaster management cycle.

**Disaster risk reduction:** Disaster risk reduction is aimed at preventing new disaster risks and reducing existing disaster risk and managing residual risk, all of which contribute to strengthening resilience and, therefore, to the achievement of sustainable development.

**Early warning system:** An integrated system of hazard monitoring, forecasting and prediction, disaster risk assessment, communication and preparedness activities systems and processes that enables individuals, communities, governments, businesses and others to take timely action to reduce disaster risks in advance of hazardous events.

**Emergent disaster:** Unpredicted and unprecedented disaster with no knowledge base from which to draw.

**Exposure:** The situation of people, infrastructure, housing, production capacities and other tangible human assets located in hazard-prone areas.

**Financial reconciliation:** Budget allocations compared with funds actually spent.

**Greenhouse gas emissions:** Atmospheric gases that are emitted and are responsible for causing global warming and climate change. The major GHGs are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O). Less prevalent but very powerful GHGs are hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF<sub>6</sub>).

**Green bonds:** Green bonds are fixed income, liquid financial instruments used to raise funds dedicated to climate mitigation, adaptation and other environment-friendly projects.

**Hazard:** A process, phenomenon or human activity that may cause loss of life, injury or other health impacts, property damage, social and economic disruption or environmental degradation. The 2020 UNDRR and International Science Council (ISC) Sendai Hazard Definition and Classification Review Report classifies hazards into eight clusters, identified as natural, socio-natural or anthropogenic (see Annex B).

**Hazard event:** The manifestation of a hazard in a particular place during a particular period of time. Note: Severe hazardous events can lead to a disaster as a result of the combination of hazard occurrence and other risk factors. The broad range of relevant hazards to risk reduction and resilience building, and the increasingly interconnected, cascading and complex nature of natural and human-induced hazards, including their potential impacts on health, social, economic, financial, political and other systems, are linked to sustainable development and climate change adaptation discussions.

**Multi-hazard:** (1) the selection of multiple major hazards that the country faces, and (2) the specific contexts where hazardous events may occur simultaneously or events occur in a cascade or cumulatively over time with potential interrelated effects.

**Multi-hazard approach:** An approach to risk analysis which involves the selection of multiple major hazards that the country faces; assessment of the contexts where hazardous events may cascade, occur simultaneously or cumulatively over time, and consideration of the potential interrelated effects.

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

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

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

**Response:** Actions taken directly before, during or immediately after a disaster in order to save lives, reduce health impacts, ensure public safety and meet the basic subsistence needs of the people affected. NB: Disaster response is predominantly focused on immediate and short-term needs and is sometimes called disaster relief.

**Risk:** The potential loss of life, injury, or destroyed or damaged assets which could occur to a system, society or a community in a specific period of time, determined probabilistically as a function of hazard, exposure, vulnerability and capacity.

**Risk driver:** Process(es) or condition(s), often development related, that influence the level of disaster risk by increasing levels of exposure and vulnerability or reducing capacity. Also called factors.

**Risk financing:** Private financing that is response focused, such as Catastrophe Deferred Drawdown Option (Cat DDO), which provides funds for response immediately following a disaster as required.<sup>60</sup>

**Risk-informed investment:** Investments that incorporate an understanding of multiple and concurrent sources of risk, which may interact in complex and cascading ways.

**Risk transfer:** The process of formally or informally shifting the financial consequences of particular risks from one party to another, whereby a household, community, enterprise or state authority will obtain resources from the other party after a disaster occurs, in exchange for ongoing or compensatory social or financial benefits provided to that other party.<sup>61</sup>

**Risk transfer financing:** Insurance is a well-known form of risk transfer financing, where coverage of a risk is obtained from an insurer in exchange for ongoing premiums paid to the insurer. Risk transfer can occur informally within family and community networks where there are reciprocal expectations of mutual aid by means of gifts or credit, as well as formally, wherein governments, insurers, multilateral banks and other large risk-bearing entities establish mechanisms to help cope with losses in major events. Such mechanisms include insurance and reinsurance contracts, catastrophe bonds, contingent credit facilities and reserve funds, where the costs are covered by premiums, investor contributions, interest rates and past savings, respectively.<sup>62</sup>

60 World Bank *The World Bank Glossary* (Washington DC: 1996).

61 UNDRR *Terminology* [www.undrr.org/terminology](http://www.undrr.org/terminology).

62 Organisation for Economic Co-operation and Development [www.OECD.org](http://www.OECD.org).

**Slow-onset disasters:** Slow-onset hazards, such as drought, insect infestations, and disease epidemics, take months or years to develop. A slow-onset disaster is defined as one that does not emerge from a single, distinct event but that emerges gradually over time, often based on a confluence of different events. Also called slow growth.

**Sustainable development:** A multidimensional undertaking to achieve a higher quality of life for all people. Economic development, social development and environmental protection are interdependent and mutually reinforcing components of sustainable development.

**Systemic risk:** It is important to note that there is no commonly agreed definition of systemic risk. Systemic risk is the possibility that an event will trigger a loss of confidence in a substantial portion of the system that is serious enough to have adverse consequences on the system's performance. The term is used extensively in financial systems, technological systems and, more recently, in disaster risk management and reduction.

In disaster risk reduction, systemic risk is defined as risk that is endogenous to or embedded in a system that has not been identified or considered as a risk and therefore is not generally tracked or managed. Systemic risks are understood to have a latent or cumulative risk that could negatively impact the overall system performance when characteristics of the system change.<sup>63</sup>

The financial definition of systemic risk is the risk of widespread disruption to financial services provision, caused by impairment of all or parts of the financial system, causing breakdown of an entire financial system (national, regional or global) rather than just a failure of individual parts, such as a bank. This can cause serious negative consequences for the real economy. This definition of systemic risk also includes the risk of cascading failure in the financial sector, due to linkages within a financial system, resulting in a severe economic downturn.<sup>64</sup>

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

63 UNDRR, *Global Assessment Report on Disaster Risk Reduction 2019* [GAR 2019](#).

64 Systemic Risk Centre. (2020). Systemic Risk. [www.systemicrisk.ac.uk/systemic-risk](http://www.systemicrisk.ac.uk/systemic-risk).

# Annex B: Hazard classifications

The Hazard Definition and Classification Review Technical Report 2020 for hazard and disaster terminology lists 302 hazards grouped in eight clusters: meteorological and hydrological hazards, extraterrestrial hazards, geohazards, environmental hazards, chemical hazards, biological hazards, technological hazards, and societal hazards. Hazards may be natural, anthropogenic or socio-natural in origin. Natural hazards are predominantly associated with natural processes and phenomena. Anthropogenic hazards, or human-induced hazards, are induced entirely or predominantly by human activities and choices.

The hazards classified below also provide indications of potential interdependencies, for example heat waves can contribute to or lead to drought and wild fire hazards.

Table 1 Hazard classification<sup>65</sup>

Hazard clusters*							
Meteorological and hydrological	Extra-terrestrial	Geological	Environmental	Chemical	Biological	Technological	Societal
Cyclones (hurricanes & typhoons)	Asteroids	Earthquakes	Biodiversity loss	Toxic chemicals	Pathogenic organisms	Telecommunications failure	Violence
	Meteors	Volcanoes	Land salination			Transport systems failure	Conflict
Droughts	Solar flares	Tsunamis	Loss of permafrost		Toxins	Nuclear infrastructure failure	
Floods		Sinkholes	Loss of sea ice		Bioactive substances	Electrical, water or health infrastructure failure	
Heatwaves		Landslides	Wildfires		Bacteria	Cyber attacks	
Tornados		Volcanoes			Viruses	Financial system failure	
					Parasites		

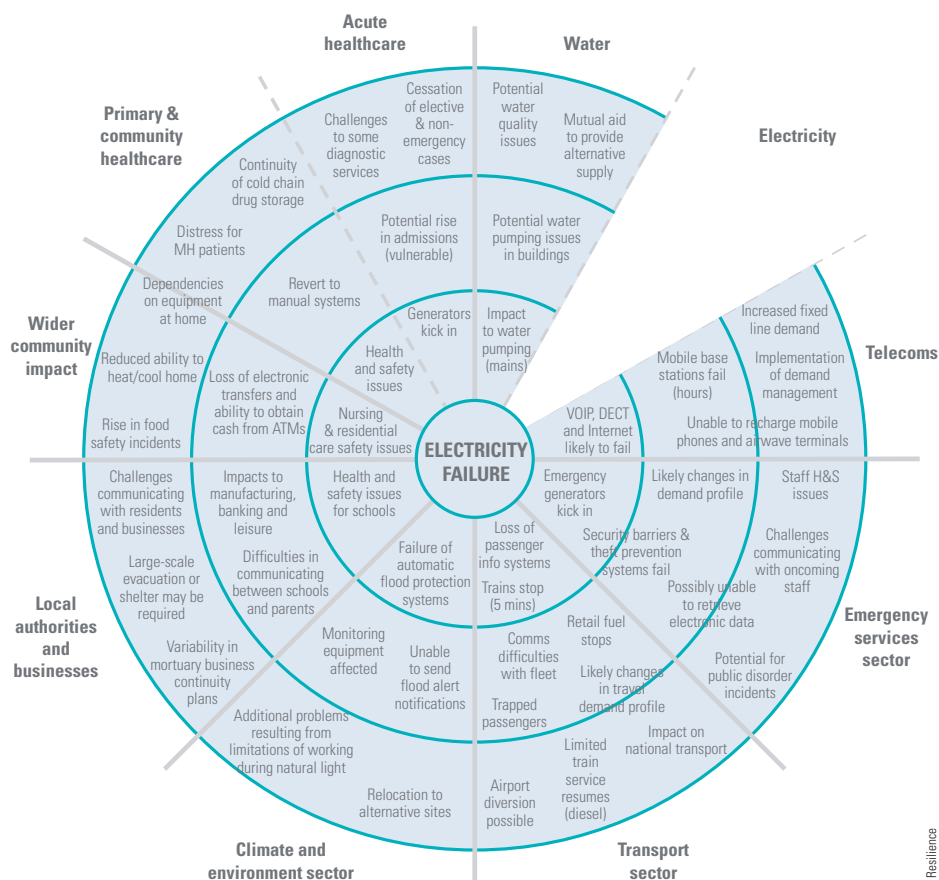
\* International Science Council – UNDRR (2020) Hazard Definition and Classification Report.

65 UNDRR and ISC [Hazard Definition and Classification Review Technical Report](#) (Geneva, 2020).

# Annex C: Infrastructure multi-hazard risk

Infrastructure is susceptible to multi-hazard risks, such as electrical failure, which can lead to cascading/compounding risk events and failures across multiple government sectors. Public and private sector cooperation is necessary for key sector stakeholders – such as health, education, transportation, agriculture, water, environment, infrastructure, finance, local governments and private sector providers – to reduce the potential impacts and costs of these types of risks (see Figure 2).

**Figure 2 – Impacts of electricity supply failure<sup>66</sup>**



Source: London Resilience

66 Matthew Hogan. *Anytown: Final Report* London Climate Change Partnership(2013), London Resilience Team p.17.

# Annex D: Resources

## Core documents

- [The Sendai Framework for Disaster Risk Reduction](#). UNISDR, 2015
- [Chart of the Sendai Framework for Disaster Risk Reduction 2015-2030](#). UNISDR, 2015
- [United Nations Paris Agreement](#). United Nations, 2015
- [Transforming our World: The 2030 Agenda for Sustainable Development](#). United Nations, 2015
- [United Nations Sustainable Development Goals](#). United Nations, 2015
- [Addis Ababa Action Agenda](#). United Nations, 2015
- [New Urban Agenda](#). Habitat III & United Nations, 2016

## Advocacy

- [Disaster risk reduction: a global advocacy guide](#). IFRC, 2009

## Agriculture

- [Benefits of farm level disaster risk reduction practices in agriculture](#). Asia FAO, 2017
- [Disaster risk reduction at farm level: Multiple benefits, no regrets Results from cost-benefit analyses conducted in a multi-country study, 2016–2018](#). FAO, 2018
- [Climate Vulnerability Assessment Making Fiji Climate Resilient](#). World Bank & GFDRR, 2018
- [Strengthening Agricultural Resilience in the Face of Multiple Risks](#). OECD, 2020

## DRR policy practices & guidelines

- [Words into Action Developing National Disaster Risk Reduction Strategies](#). UNDRR, 2020
- [Words into Action Local Disaster Risk Reduction and Resilience Strategies](#). UNDRR, 2019
- [Global Assessment Report on Disaster Risk Reduction 2015](#). UNISDR, 2015
- [Global Assessment Report on Disaster Risk Reduction 2019](#). UNDRR, 2019
- [Preventive disaster management of extreme natural events](#). 2007 Nat Hazards 42
- [Ethical principles on Disaster Risk Reduction and People's Resilience](#). Council of Europe, 2012

- [Preventive disaster management of extreme natural events](#) Ismail-Zadeh & Kuniyoshi Takeuchi, Nat Hazards, 42/3 (2007), 459-467
- [Common ground between the Paris Agreement and the Sendai Framework: CCA & DRR](#) OECD, 2020

### **Parliamentary functions**

- [Climate Action Plan](#). Inter-Parliamentary Union, 2016
- [Climate Change and Small States: Parliamentarians Toolkit](#). Commonwealth Parliamentary Association, 2019
- [ParlAmericas Parliamentary Protocol on Disaster Risk Reduction and Climate Adaptation](#). ParlAmericas and UNDRR, 2019
- [Working with...Parliamentarians](#). UNDRR, 2020

### **Legislative & governance**

- [Handbook on Law and Disaster Risk Reduction](#). UNDP & IFRC, 2015
- [Checklist on the Law and Disaster Risk Reduction](#). IFRC, 2015
- [Strengthening Disaster Risk Governance | UNDP](#). UNDP, 2015
- [Strategic approach to capacity development for the implementation of the Sendai Framework](#). UNDRR, 2018
- [Law and disaster preparedness multi-country synthesis report](#). IFRC, 2019

### **Financial**

- [Financing for Sustainable Development Report](#). UN Inter-Agency Task Force on Financing for Development, 2019
- [Finance Options and Instruments for Ecosystem-Based Adaptation. Overview and Compilation of 10 Examples](#). German Corporation for International Cooperation (GIZ), 2018
- [World Economic Outlook Update](#). International Monetary Fund October, 2020
- [Global Economic Prospects](#). World Bank, June, 2020
- [Finance for reducing disaster risk: 10 things to know](#). Overseas Development Institute (ODI), 2015
- [OECD Recommendation on Disaster Risk Financing Strategies](#). OECD, 2017

### **Gender**

- [Plan of action for gender-sensitive parliaments](#). IPU, 2017



## Oversight

- [Technical Guidance Notes for Monitoring and Reporting on Progress in Achieving the Global Targets of the Sendai Framework for Disaster Risk Reduction](#). UNISDR, 2017
- [Setting, Measuring and Monitoring Targets for Disaster Risk Reduction: Recommendations for post-2015 international policy frameworks](#). ODI, 2014
- [Global Parliamentary Report- Parliamentary Oversight](#). Inter-Parliamentary Union (IPU) & United Nations Development Programme (UNDP), 2017

## Scientific

- [Hazard Definition and Classification Review Technical Report](#). UNDRR & International Science Council, 2020

## Urban environments/cities

- [Coalition for Disaster Resilient Infrastructure \(CDRI\) web-page](#)
- [Guide to Climate Change Adaptation in Cities](#). World Bank, 2011
- [Resilient Cities, Thriving Cities: The Evolution of Urban Resilience](#). ICLEI-Local Governments for Sustainability, 2019
- [Making Cities Resilient 2030](#). UNDRR, 2020
- [Incentives for Reducing Disaster Risk in Urban Areas](#). Asian Development Bank, 2015
- [Words into Action guidelines: Implementation guide for land use and urban planning](#). UNDRR, 2020
- [www.openstreetmap.org](http://www.openstreetmap.org)
- [Anytown: Final Report](#). London Climate Change Partnership, M. Hogan, London Resilience Team, 2013

## Vulnerable populations

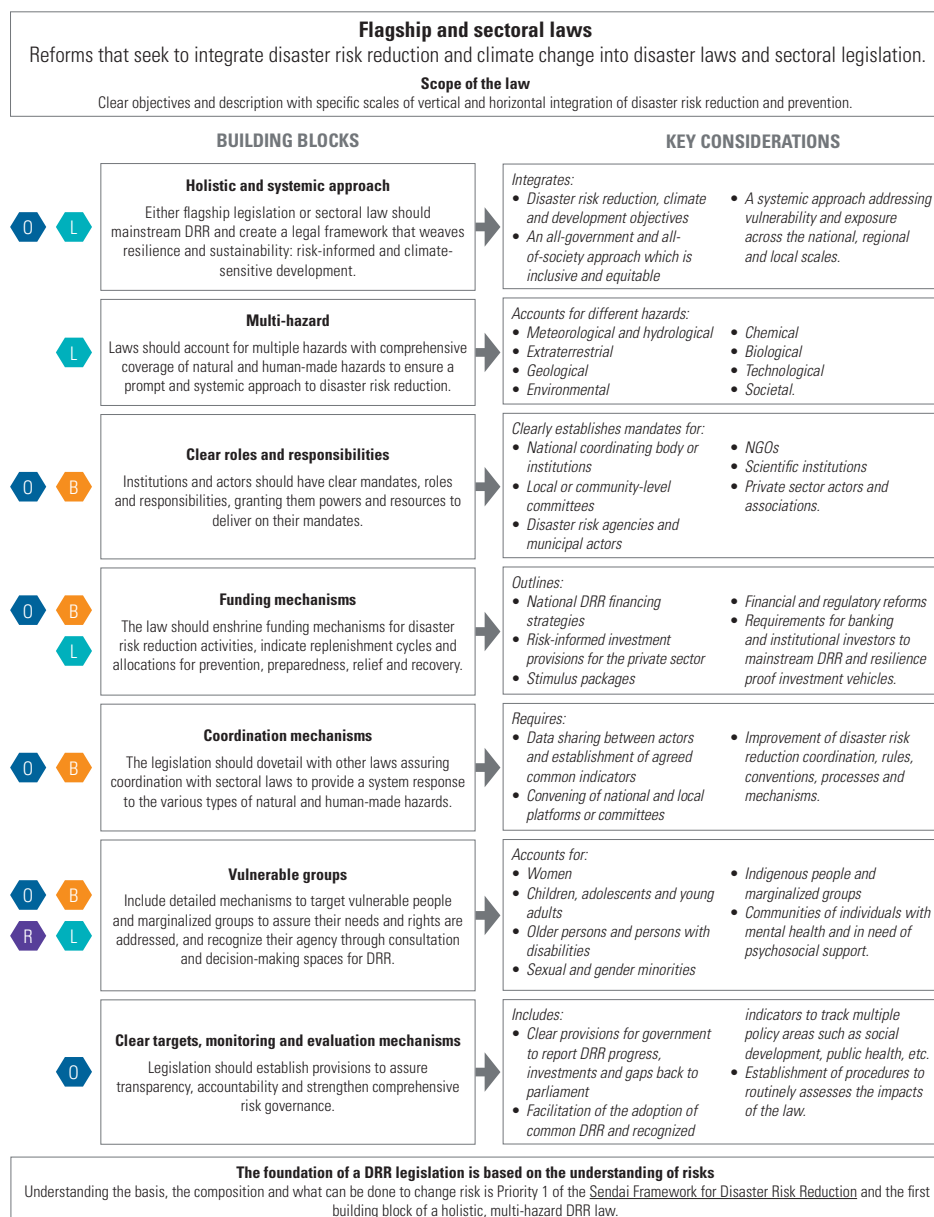
- [Five Actions for Disability-Inclusive Disaster Risk Management](#). Global Facility for Disaster Risk Reduction and Recovery (GFDRR), 2018
- [Case Studies: Red Cross Red Crescent Disaster Risk Reduction in Action – What Works at Local Level](#). International Federation of the Red Cross, 2018
- [30 innovations linking disaster risk reduction with the Sustainable Development Goals](#) Izumi, T. and others, 2020
- [Unbreakable: Building the Resilience of the Poor in the Face of Natural Disasters](#). Stephane Hallegatte and others, 2017
- [Words into Action guidelines: Engaging children and youth in disaster risk reduction and resilience building](#). UNDRR, 2020

- [Global Humanitarian Overview](#). OCHA, 2021
- [Human Cost of Disasters: An Overview of the Last 20 Years](#). UNDRR, 2020
- [Poverty & Death: Disaster mortality 1996-2015](#). UNDRR, 2016
- [Law and Policies that Protect the Most Vulnerable Against Climate-Related Disaster](#) T. Natoli, IFRC, 2020

### **Risk reduction – specific hazards**

- [Disaster Risk Reduction in UNESCO designated sites web-page](#)

# Annex E: Building blocks for flagship and sectoral laws<sup>67</sup>



● Budget
 ● Legislate
 ● Oversee
 ● Represent

67 Graphic created by Mr. Jose Di Bella (2020).

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