

CONCEPT NOTE

COALITION FOR DISASTER RESILIENT INFRASTRUCTURE (CDRI)

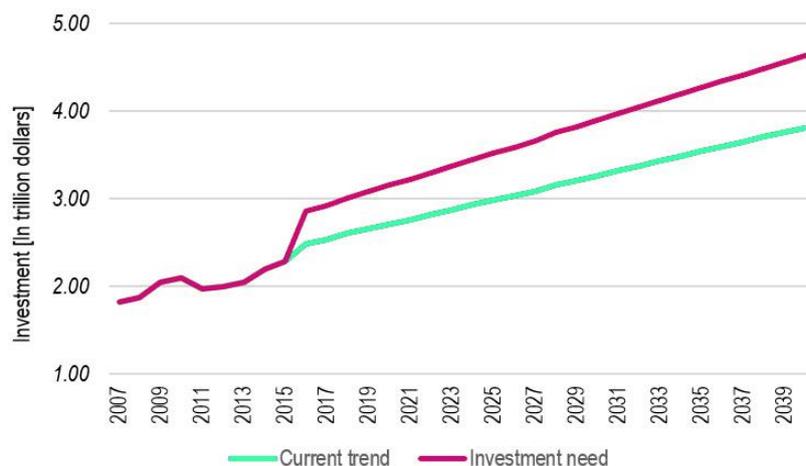
INTRODUCTION

The Sendai Framework for Disaster Risk Reduction (SFDRR) highlights the role of improved disaster resilience, especially of infrastructure, as a cornerstone for sustainable development. While inaugurating the Asian Ministerial Conference on Disaster Risk Reduction (AMCDRR, New Delhi, Nov 2016), the Prime Minister of India announced that India would work with partner countries and key stakeholders in launching a “Coalition” for disaster resilient infrastructure.

The Government of India has been engaging with national governments, multilateral development banks, United Nations agencies, the private sector and academia to build the case for investing in resilient infrastructure. It was found that few concrete initiatives work at the intersection of the Sendai Framework, Sustainable Development Goals (SDGs) and, Climate Change Adaptation with a focus on infrastructure. Thus, a global initiative such as the Coalition for Disaster Resilient Infrastructure (CDRI) has a clear niche and will address concerns that are common to countries at different stages of development and having varied disaster risks.

INFRASTRUCTURE GROWTH AND DEVELOPMENT

Increasing physical infrastructure, both in quality and quantity, is a prerequisite for enhancing economic growth. Physical infrastructure underpins the achievement of all 17 Sustainable Development Goals and about 92% of their targets. According to Global Infrastructure Hub, an estimated USD 94 trillion is expected to be invested in infrastructure globally from 2016 to 2040 to sustain economic growth and mitigate the effects of climate change and disasters (figure 1). With the increasing demands of a growing global population, the existing infrastructure will be put under additional stress and a large proportion of new infrastructure will be inevitably built in hazard-prone areas.



**FIGURE 1: INFRASTRUCTURE INVESTMENTS - CURRENT TRENDS AND NEEDS
(COMPUTED FROM GLOBAL INFRASTRUCTURE HUB)**

LOSSES DUE TO DISASTERS

Disasters cause massive human and economic losses across the world. It has been estimated that between 1995 and 2015, disasters caused between USD 2 to 2.5 trillion in economic losses. Due to the changes in climate patterns, hydro-meteorological or climatological hazards are likely to cause even more damage in the future due to the unpredictability in their frequency, intensity and location. In major disasters, infrastructure losses make up for two-thirds of total public losses (Table 1).

Country / Year	Event	Total damages and losses (D&L) (USD mn)	Infrastructure D&L as % of TOTAL losses	Infrastructure D&L as % of PUBLIC losses
India/ 2001	Earthquake	2.131	16%	n/a
Indonesia/ 2004	Tsunami	4.452	20%	56%
Sri Lanka/ 2004	Tsunami	970	13%	n/a
Pakistan/ 2005	Earthquake	2.852	17%	n/a
Indonesia/ 2006	Earthquake	3.134	2%	17%
Pakistan/ 2010	Floods	10.056	20%	n/a
Samoa/ 2012	Cyclone	204	37%	66%
Cape Verde/ 2014	Volcano	28	8%	30%
Nepal/ 2015	Earthquake	7.065	9%	30%
Fiji/ 2016	Cyclone	1.327	9%	47%

TABLE 1: DAMAGES AND LOSSES TO INFRASTRUCTURE DUE TO DISASTERS

Modern infrastructure is an interconnected system of systems. Damage to one asset can lead to a reduction in service levels of different individual infrastructure assets. Beyond the damage to assets themselves, these can have cascading effects resulting in loss of lives, livelihoods, and economic activity. The poor typically bear the worst brunt of such events as they often lack adequate resources for coping with exigencies such as disasters. Thus, the downstream effects of the loss and damage to infrastructure may be felt for years after the event. There is a case for sharing knowledge and resources at a global scale to improve the resilience of this infrastructure and the surrounding development to reduce losses by disasters.

THE NICHE FOR CDRI

There are many initiatives on different aspects of disaster risk reduction and many initiatives on infrastructure development in different sectors. However, few significant ones address the notion of disaster resilience for infrastructure in a range of countries with different disaster risk and development contexts. A global Coalition for disaster resilient infrastructure would address concerns that are common to developing and developed countries; small and large economies; countries at early and advanced stages of infrastructure development; and countries that have moderate or high disaster risk. Few concrete initiatives work at the intersection of Sendai Framework, Sustainable Development Goals (SDGs) and, Climate Change Adaptation with a focus on infrastructure. Focus on disaster resilient infrastructure would simultaneously address all the loss reduction targets under the Sendai Framework, address a number of SDGs and also contribute to climate change adaptation. Hence, there is a clear niche for a Global Coalition for Disaster Resilient Infrastructure (figure 2).

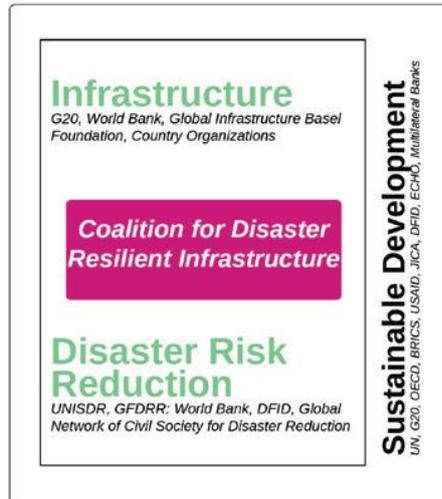


FIGURE 2: THE NICHE FOR CDRI

PURPOSE OF THE COALITION

The Coalition would address a common challenge of building resilience into infrastructure systems, particularly in the context of increasing disaster risk in the face of climate change. It would benefit both developing and developed countries. For developing countries that are in the early stages of infrastructure development; the Coalition would provide access to good practices to develop appropriate standards as well as regulatory mechanisms to manage infrastructure development in a manner that fosters resilience. For developed countries; this would provide an opportunity to engage with the development of infrastructure systems that are interconnected globally.

The Coalition would also serve as a platform where knowledge is generated and exchanged on different aspects of disaster resilience of infrastructure. It will bring together a multitude of stakeholders — governments, private sector, academic research institutions and international organisations. In doing so, it will create a mechanism to assist countries, upgrade their capacities, standards, regulations and practices with regards to infrastructure development in accordance with their disaster risk context and their economic needs.

SCOPE AND FUNCTIONS OF CDRI

Consultations with the wider base of stakeholders through two International Workshops on Disaster Resilient Infrastructure (IWDR 2018 and IWDR 2019) and multiple round-table discussions, bi-lateral and multi-lateral meetings, have helped to identify 8 thematic areas around which the CRDI could be developed. These have been identified as ‘Action Portfolios’ in the diagram below (figure 3). These portfolios are to be implemented within the three dimensions of scale, sector, and region. These dimensions and portfolios have been elaborated on after the figure.

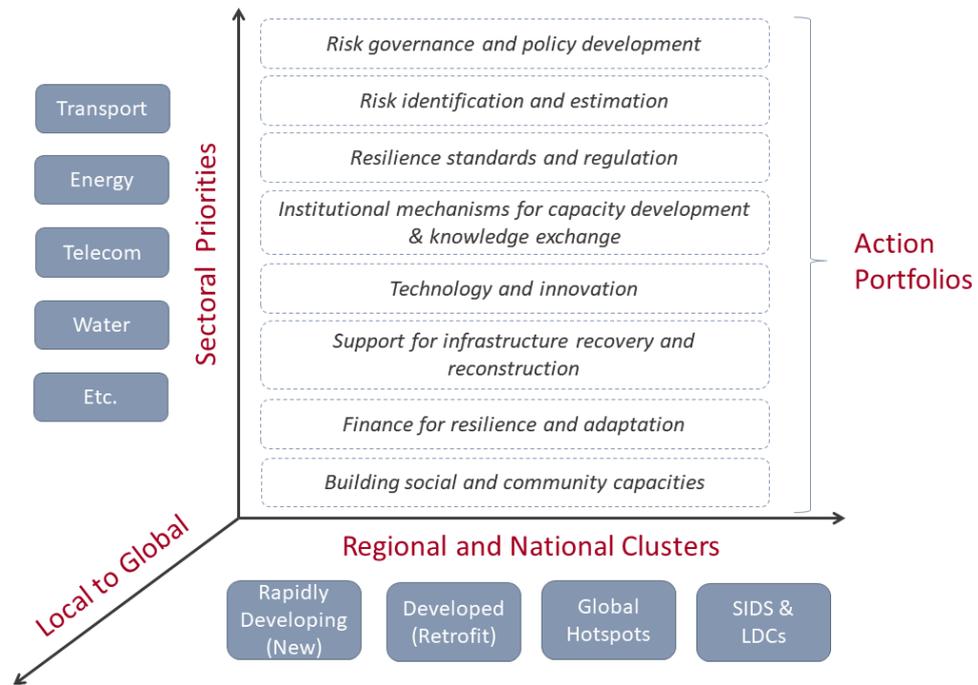


FIGURE 3: FRAMEWORK FOR CDRI

The Three Dimensions

Sectoral priorities

While there is a need for a ‘system of systems’ perspective to planning and managing risk to and from infrastructure, the implementation of infrastructure projects is usually carried out in sectoral silos. Actions taken towards improving resilience will flow through these silos and hence must be customized to the characteristics of the sector and its comprising infrastructure. Some sectors would be easier to address than others.

Regional and national clusters

National governments will have to provide the institutional basis for the implementation of a systems approach. Governments will have to consider mechanisms for mainstreaming of disaster risk management considerations at all levels and a harmonisation of policies to build national resilience. All nations have different characteristics of infrastructure growth, economic development, and geographical characteristics. While these contexts present a large diversity of challenges, the typologies attempt to bring together countries with similar contexts so as to help identify the institutional arrangements required to build disaster resilient infrastructure in their context.

Global to local and vice-versa

Actions will have to be taken at all levels to be effective. Global discourses can provide guidance and alignments for national priorities. Nations will have to balance local and national priorities through effective engagement with all stakeholders in the infrastructure construction and maintenance process. Infrastructure resilience should support the resilience of local communities.

Action Portfolios

- 1. Risk governance and policy development:** The development of governance and policy arrangements required to enable the integration of disaster and climate resilience concepts in all infrastructure creation.
- 2. Risk identification and estimation:** The identification and estimation of risk to and from infrastructure from large and small hazards, from the macro to micro scales.
- 3. Resilience standards and regulation:** Adoption of mechanisms required for developing, enforcing, and updating scientific standards and regulations for infrastructure resilience in light of changing technology and risk profile.
- 4. Institutional mechanisms for capacity development and knowledge exchange:** Enabling the exchange and spread of scientifically accurate knowledge enabling the contribution of all stakeholders to building resilience of infrastructure systems.
- 5. Technology and innovation:** Harnessing and leveraging the power of technology to address constraints on accuracy, scale, reach and capacity in constructing, operating and recovering infrastructure systems.
- 6. Infrastructure recovery and reconstruction:** Ex-ante development and adoption of mechanisms for assessing losses, estimating needs, and channelling adequate funds to disaster affected areas in a timely manner.
- 7. Financing resilience and adaptation:** Risk financing strategies for each nation will depend on its capacity, risk appetite, resources, and willingness to manage risk. Appropriate financing can incentivise resilience of infrastructure systems.
- 8. Building social and community capacities:** Building the capacities of local communities to participate in the process of creating and sustaining small and large scale infrastructure, so as to enhance disaster and climate resilience of the community and its surrounding infrastructure.

KEY PRINCIPLES FOR CDRI

Flexibility in membership: Given the scope of work on disaster resilient infrastructure, it is vital that the Coalition has an inclusive orientation to membership, both concerning sovereign nations, as well as other actors (multilateral development banks, international organisations and private sector). The nature of their membership and participation in the Coalition may differ but it is important that an inclusive approach is underlined. While the purpose, scope and the functions have been outlined above, this is only a starting point. These elements of the Coalition need to ultimately be co-created by the key stakeholders. An initial sketch of the governance arrangements has been proposed in the next section to initiate discussions with potential partners.

Communication Strategy: Common and consistent messaging that is relayed through multiple channels would be critical for promoting and strengthening the Coalition. This will provide clear messaging about what the Coalition stands for; who are the partners/ members; who can become members; define the objectives and how different countries and stakeholders can benefit from participating in it.

Develop a network at home: Participation in the global Coalition would benefit countries only if they can use it to leverage change at home. Towards this end, countries should try to develop a national network of key players in the infrastructure space. This may include key government ministries and departments, financiers and developers, private sector players, scientific and technical institutions and think tanks.

Focus on key deliverables: The first few years of the Coalition should be focused on a few key deliverables; one or two under each of the four verticals identified in the earlier sections. This will establish the value addition of the Coalition and gradually build wider ownership. These deliverables should aim to strike a balance between generation of knowledge and provision of direct support to countries either in the form of specific technical assistance or capacity development.

THE FORM OF THE COALITION

The specific form of the coalition will be co-created by its members and partners. The basic governance structure and mechanism for the coalition are proposed below.

Governance: The Governance arrangement would comprise three principal bodies: (a) The Governing Council as the policy making body; (b) the Executive Committee as the managerial body; and (c) the Secretariat as the operational body.

Membership: The CDRI is envisioned as a multi-stakeholder global partnership of national governments, UN agencies and programmes, multilateral development banks and financing mechanisms, the private sector, and academic and knowledge institutions. Countries or sovereign states will constitute a majority of the membership of the Coalition and will have a key role in setting its substantive agenda as well as in its governance.

Funding: A large share of the estimated fund requirements to cover the core costs over the first three years will be put in by India. Other members and partners may contribute to the funding requirements as they join the Coalition.

Secretariat: The Coalition will have a Secretariat in New Delhi. The secretariat will engage domain experts recruited from the national and international market or appointed by member countries on a secondment basis or deputed by international organisations as per requirement and from time to time. The secretariat may have four wings, namely: a) Technical Support and Capacity Development; b) Research and Knowledge Management; c) Advocacy and Partnerships; d) Secretariat Operations and Management.

CONNECTIONS WITH OTHER GLOBAL INITIATIVES

As an initiative that aims to address resilient growth of infrastructure, the CDRI finds itself at the intersection of the three post-2015 global development agendas of sustainable development (SDGs), disaster risk reduction (SFDRR) and climate change adaptation (Paris Agreement). Thus the CDRI finds potential lines of synergies with agendas of most important global forums.

The urgency of mindful, climate-aware investment in infrastructure is being brought to the forefront at global forums such as the G20 Summit. The G20 Leaders' Declaration at Buenos Aires 2018

recognised, *"the importance of comprehensive adaptation strategies, including investment in infrastructure that is resilient to extreme weather events and disasters."* It supported actions and cooperation in developing countries, especially those that are particularly vulnerable, including small island states [Point 19]. Through various working groups mainly the "Development Working Group (DWG)" and "Climate Sustainability Working Group", the G20 Presidency is encouraging collaboration in the areas of "Quality Infrastructure Investment" and better financial regulations for infrastructure. The CDRI can work to bring in aspects of climate and disaster resilience under these areas.

The UN Climate Summit 2019 has "Resilience and Adaptation" as one of its six key action portfolios to take transformative steps to mitigate climate impact. The recently launched Global Commission on Adaptation (GCA), overseen by former UN Secretary-General Ban Ki-moon, aims to enhance the political visibility of adapting to climate change, focussing upon on solutions, catalysing the global adaptation movement and accelerating action. The Commission will present a flagship report at the UN Climate Summit in September 2019, which will include a chapter on adaptation of infrastructure systems. A consultation workshop to gather stakeholder inputs on this chapter on infrastructure was organised by GCA on the margins of IWDR1 in March 2019.

By bringing on board potential country and agency partners, post-workshop engagements of the IWDR1 will be pursued in various capacities at the following forums. These would also serve as channels of pursuing collaborative projects under the institution of the CDRI:

1. Global Platform for Disaster Risk Reduction (GPDRR), 2019
2. UN General Assembly Special Thematic Session on Water and Disasters, June 2019
3. UN Climate Summit 2019
4. Asian Ministerial Conference for Disaster Risk Reduction 2020

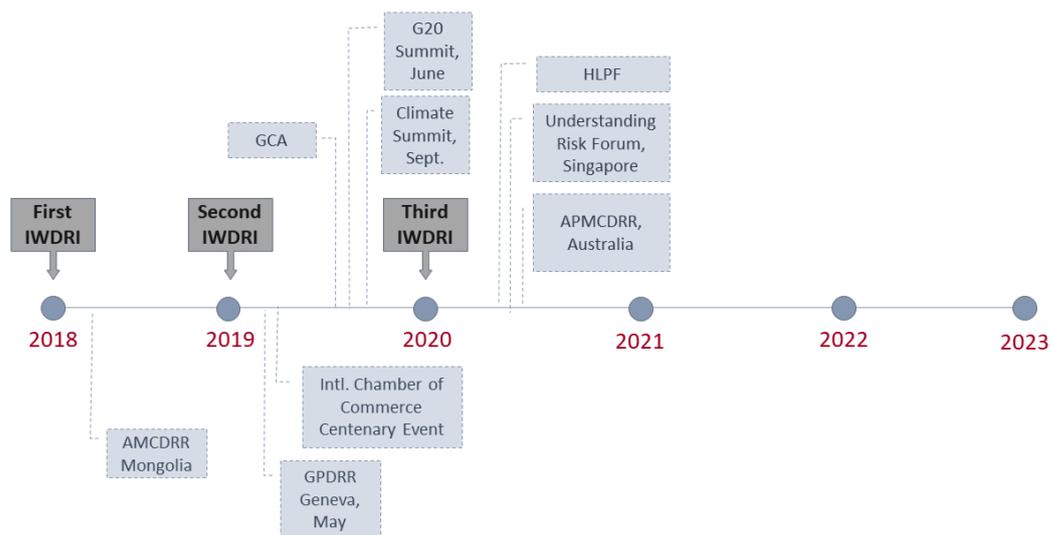


FIGURE 4: TIMELINE OF GLOBAL EVENTS AND CDRI DEVELOPMENT
