

Developing a Lexicon to bring consistency to stakeholder practices in Disaster Resilient Infrastructure

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1. About the Case Organization

The Coalition for Disaster Resilient Infrastructure (CDRI)¹ is an international coalition of countries, United Nations agencies, multilateral development banks, the private sector, and academic institutions, that aims to promote disaster-resilient infrastructure (DRI). Its goal is to galvanize action by national governments, international development and financing institutions, private sector, academia and civil society to strengthen the resilience of new and existing infrastructure, a goal that is made more pressing by the changing conditions and increased stress on infrastructure, brought about by climate change.

2. About the Challenge

The challenge is that the domain of infrastructure involves many different players and specialised domains. Across the lifecycle of infrastructure – from conceptualisation to execution, operation and maintenance, different stakeholders within the government, private, academia and communities have a role in planning, design, financing, building, maintaining and using infrastructure.

Further, given the interdependencies between different sectoral systems, such as the need for power supply systems for running telecommunication towers necessary for swift financial flows, infrastructure is a highly complex ‘system of systems’. This interdependence is an important determinant of ‘resilience’ of infrastructure systems, a concept that is fast gaining currency given the ongoing climate crisis affecting performance and longevity of infrastructure assets.

In order to collaborate for large-scale action on resilience of infrastructure, these diverse stakeholders need a common vocabulary with a shared understanding of terms and concepts. There are existing glossaries developed by experts within the international community that support the disaster risk and climate change domains, but there are gaps in explaining how the central concepts in these domains apply specifically to infrastructure, and while there may be terms in common, they may be understood differently in different contexts. This gap led to the practical imperative of building upon the foundational work in those existing glossaries, to develop a globally accepted “Lexicon for Disaster Resilient Infrastructure”.²

Our vision for the DRI Lexicon Project was to provide a common and consistent set of reference definitions that apply the core concepts of resilience, sustainability, risk and disaster risk management (among others) to infrastructure; and in so doing, to help countries and their stakeholders to use the opportunity of DRI to achieve the UN’s Sustainable Development Goals, deliver on the expectations of the Sendai Framework for Disaster Risk Reduction, and fulfil the mandates of the Paris Climate Accords.

¹ <https://www.cdri.world/>

² <https://lexicon.cdri.world/>

More specifically, CDRI's goal with the Lexicon was to facilitate the creation and use of a common vocabulary on key terms and concepts of the DRI field. Its objectives include:

- consolidating a more systematic, comprehensive, and consistent understanding of the domain;
- promoting effective communication and coordination across multiple stakeholder groups; and
- supporting research, learning, and the creation and sharing of new knowledge in a rapidly developing field of practice.

3. What You Did

Because the nature of the challenge is a multi-disciplinary one, the CDRI Secretariat began by putting together a panel of subject matter experts from the government, the private and non-profit sectors, and academia, representing different geographies and varied disciplines including engineering and architecture, spatial planning, finance, economics, international development, social sciences and knowledge management. With the CDRI Secretariat, this panel worked over a period of 10 months (from April 2022 – January 2023) to develop a methodology, a clear scope statement, and then the definitions of priority terms relevant to DRI.

The group began by identifying key notions and concepts now in use for DRI. As an initial entry point, the group referred to the CDRI's stated objectives, and listed 270 terms that were potentially relevant, relatable to these objectives, and to CDRI's priority programmes and action areas. Some other terms such as sustainable development that are relevant but did not require further interpretation/explanation for DRI have not been included in the DRI Lexicon for ease of reference by users. The final list of terms in the first edition comprises 66 core terms with numerous other concepts referenced in scope notes.

One basic principle was to re-use standard concepts and definitions (e.g. from standard vocabularies developed by UN agencies). In some cases these definitions were modified or expanded to make the relevance to infrastructure clear. In some cases, the Lexicon used scope notes to amplify the meaning in relation to infrastructure, to provide context, to clarify possible ambiguities, or to alert users to areas of contention. Relationships between terms were also mapped, so that users could navigate from one term to another related term.

This effort was innovative in its breadth and scope, and used an intensive, dialogue driven approach to ensure that the different disciplinary perspectives and experience-based insights could be satisfactorily integrated for multi-disciplinary user communities.

To finalize the document, the draft definitions were shared with an advisory committee comprising of technical experts from CDRI member organisations such as the UNDRR, ADB and the EU as well as the CDRI Appraisal and Steering Committee (ASC), an internal mechanism for quality assurance. This allowed the document to benefit from a range of country contexts that the member organisations and ASC members were engaged with. The next draft was put up for an open, global review through the CDRI digital forum that was widely socialised by CDRI. This process enabled a range of inputs from across the world mainly from academia and civil society.

4. Challenges and Lessons Learned

Precisely because this was an innovative project for which there are no clear precedents, there were initial challenges in establishing common ground between the group of experts

who were collaborating for the first time. We quickly established a general methodology, in defining key use cases for the Lexicon, using those to narrow down the scope of the project, and then describing the features the Lexicon should have to support those user communities (e.g. cross references between concepts, use of notes to provide additional context, providing references for sources, and providing exemplar case studies to illustrate the concepts).

However, it took some time to establish a working rhythm on how to synthesize the different perspectives reflected on the panel, into shared definitions. Almost all meetings were virtual, but about half way through the process, we used the opportunity of a conference hosted by CDRI to bring a number of the panel members together in Delhi. An intensive two days of working face to face established a working rhythm, clear operating principles for future decisions, and a strong *esprit de corps* that extended even to the members who were attending remotely. In retrospect, it might have been a good idea to begin this process with an intensive face to face meeting, had that opportunity been available.

One further challenge came in the global consultation, where there was some pressure to standardize / align with a number of definitions that were already available elsewhere, and to remove any alterations or amendments. In this case, because of the panel's clear principles, we were able to give a clear account of why some concepts needed additional modification (without changing the root meaning) in order to clarify to users how the concept related to disaster resilient infrastructure.

Our advice to another organization attempting a similar project would be to invest time and effort in establishing common ground through intensive (preferably face to face) interaction as early as possible in the project, and not to under estimate the amount of time it will take to reach a consensus that is truly representative of the different disciplines around the table.

5. Impact and Benefits

The Lexicon was launched in April 2023 in both web and print formats, so it is still early to see results in relation to the larger goals of the Lexicon. However, anecdotal feedback is that the Lexicon will be used in teaching and research contexts, and our web traffic on the internet version of the Lexicon is about 500 unique users as on 1 June 2023.

This was a pioneering project, filling an important gap in the vocabularies available for working on disaster resilient infrastructure. There is no other instrument available that meets this need.

The principle reasons for success were

- a) the sustained support and resolve of the CDRI Secretariat in driving this project, providing support and resources, integrating the Lexicon work with its other activities, and being prepared to adapt the approach as the Lexicon evolved
- b) the strong *esprit de corps* that was build among the expert panel, and the mutual respect and willingness to hear from and seek to incorporate alternate perspectives.

6. Next Steps

The Lexicon is already being used by CDRI in its programmes with various partners. The Secretariat is developing 'Res-Smart', an interactive card game that has been piloted in a few workshops and training programmes conducted by CDRI. The game holds promise as a

unique tool for helping participants from diverse backgrounds to develop a shared understanding of DRI concepts and terms through discussion and discovery by matching concepts / terms with their definitions. Once finalised, the game will be shared with CDRI members and partners for wider outreach. It is hoped that the Lexicon will also be used as a basis for training in DRI related topics.