

WEBINAR

Digital Technologies for Disaster Risk Management

Trends & Opportunities for Digital Technology in Support of Disaster Risk Reduction and Sendai Framework Implementation

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Virtual Launch of the APCICT Academy Module on ICT for Disaster Risk Management

Growing risk in a shrinking world

“If I had to select one sentence to describe the state of the world, I would say we are in a world in which global challenges are more and more integrated, and the responses are more and more fragmented, and if this is not reversed, it’s a recipe for disaster.”

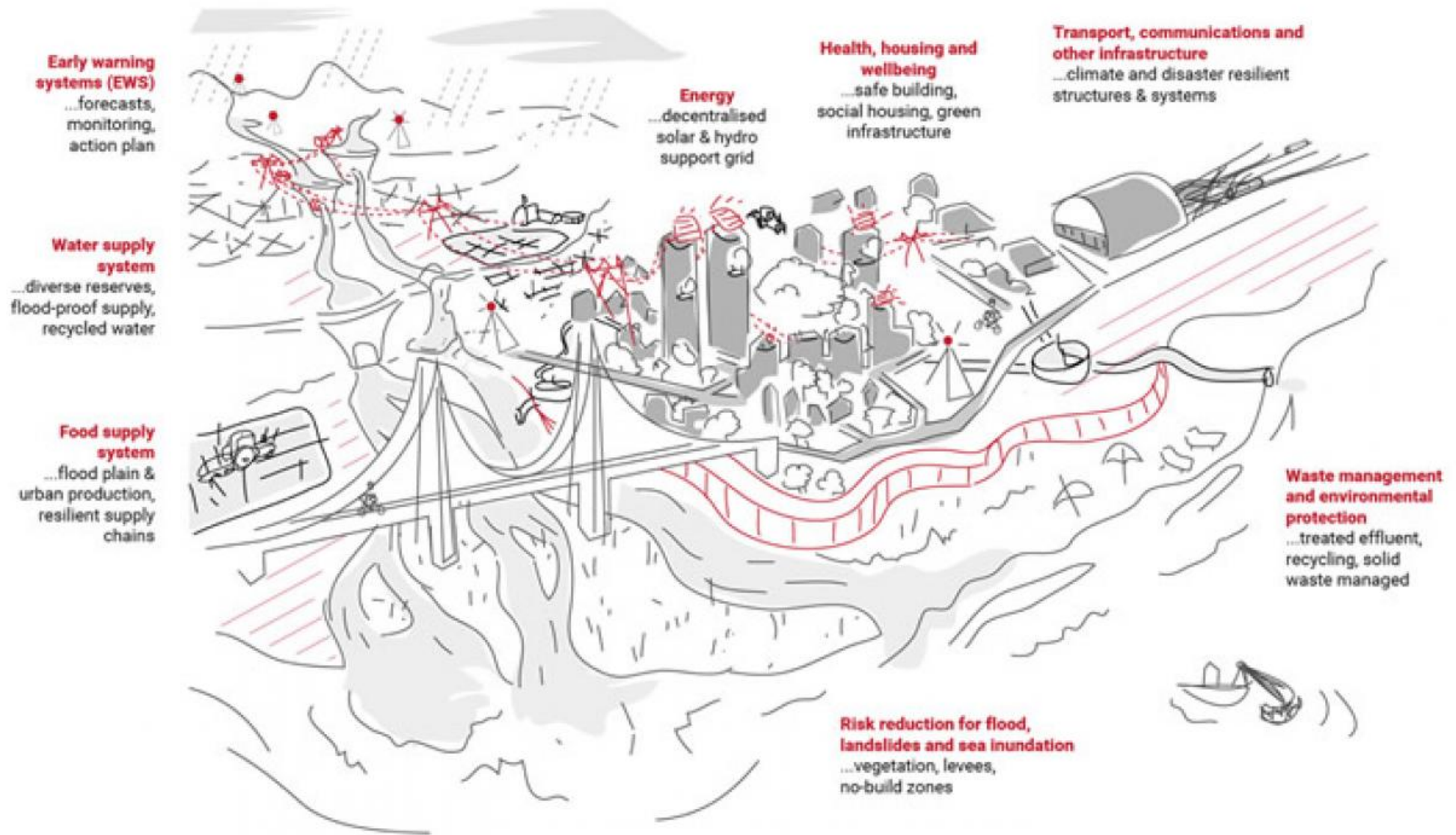
*António Guterres, United Nations Secretary-General,
January 2019*

Towards Systemic Risk Governance – the ‘innovation curve’



Special Scenario: What will success look like in the fictional city of Drecca-Susdev?

Elements of integrated risk governance - enabled in part by technology





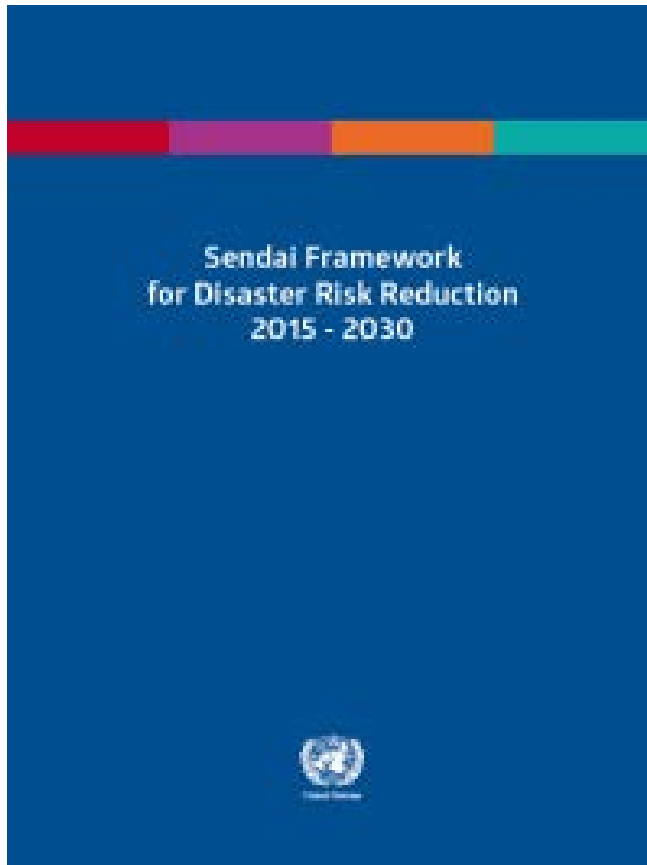
Challenges are Opportunities for Technology

The Sendai Framework for Disaster Risk Reduction

Prevent the creation of new risk

Reduce existing risk

Invest in Resilience



| | | | |
|-------------------------|--|-------------------------------|--------------------------------|
| 4 PRIORITIES FOR ACTION | Priority 1 Understanding disaster risk <i>Policies and practices for DRR should be based on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment.</i> | National and local dimensions | Regional and global dimensions |
| | Priority 2 Strengthening disaster risk governance to manage disaster risk <i>Disaster risk governance at the national, regional and global levels is of great importance for an effective and efficient management of disaster risk.</i> | | |
| | Priority 3 Investing in disaster risk reduction for resilience <i>Public and private investment in DRR are essential to enhance the economic, social, health & cultural resilience of persons, communities, countries, their assets, as well as environment</i> | | |
| | Priority 4 Enhancing disaster preparedness for effective response, and to “Build Back Better” in recovery, rehabilitation and reconstruction <i>Strengthened disaster preparedness for response, recovery, rehabilitation and reconstruction are critical to build back better</i> | | |

The Sendai Framework: Role of Technology

Priority 1 Understanding disaster risk

Policies and practices for DRR should be based on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment.

National and Local

(f) To promote **real time access to reliable data**, make use of **space** and **in situ information**, including geographic information systems (GIS), and use **information and communications technology innovations** to enhance **measurement tools** and the **collection, analysis** and **dissemination** of data;

The Sendai Framework: Role of Technology

Means of Implementation

(c) To promote the use and expansion of thematic platforms of cooperation, such as **global technology pools** and **global systems** to **share know-how, innovation and research** and **ensure access** to technology and information on disaster risk reduction;

Enabling & Creating Partnerships

- UNDRR Science & Technology and Advisory Groups (STAG, APSTAAG, others)
- Global Assessment Report and Global Risk Assessment Framework (GRAF)
- Science Policy Interface Platform, youth representatives of the UN Major Group on Science and Technology and the Global-Inter-Agency Network on Youth Development (IANYD)
- ARISE Private Sector Alliance for Disaster Resilient Societies
- PreventionWeb: DRR Community Platform

Opportunities & Enablers: Data and Technology

Hazard knowledge

Data collection from Earth systems (climate, oceans, land and weather), as well as the societal systems (population location, density and vulnerability)

Open data in research and innovation sectors:

- Facilitates interdisciplinary, inter-institutional and international research.
- Enables data mining for automated knowledge discovery among the growing amount of big data available to researchers and policymakers.
- Supports improved decision-making and enhances transparency in government and society.



Open source software

Shared software helps promote greater levels of understanding of hazards rooted in the same methodology.

Interoperability

Compatible formats and well-known quantities make diverse data possible to integrate to form new data and products.

- Improves availability of knowledge and data, including across ministries/sectors required for loss accounting and risk-informed planning
- Encourages practitioners across disciplines to think about the wider implications of risk-informed decisions.

Data science

The growth in the amount of data collected brings a growing requirement to be able to find the right information at the right time, and challenges of how to store, maintain and use the data collected.

Example:

Understanding Risk, Enabling Citizen Engagement

Safety e-Report and EmergencyReadyApp (Rep of Korea) – Cellular Broadcasting Service

Everyday Preparedness, Risk Identification & Citizen Reporting

Report status

| | | |
|-------------------------|----------------------------------|----------------------------------|
| Total | Processing | Completed |
| 162,134 No. of cases | 36,656 No. of cases 22.61% | 125,478 No. of cases 77.4% |

Report risk factors in daily lives to the Safety e-Report

Safety e-Report

Introduction Safety report My report FAQ

Nationwide | Area | Area | Area

Report Progress

| Report | Progress | Completed |
|-----------|----------|-----------|
| 1,413,803 | 24,988 | 1,388,815 |

Major Case

Before After

Sign blocked by the weed

Public guideline for safety

Go go safety with Eukbak - Safety in mud flat

[Café safety] How to report use handheld electric fan

<https://safetyreport.go.kr/eng/#main>

Real-time Alerts & Safety Guidance

Disaster Alert

EMERGENCY

[Bupyeong-gu Office] 4 confirmed cases occurred (1 Bupyeong 2-dong / 1 Sangok 2-dong / 1 Bugae 3-dong). In quarantine and epidemiological investigation. blog.naver.com/withbupyeong

EMERGENCY

Public Safety Alert

[인천광역시] 태풍 접근금지 등 외출 시 안전에 주의하시기

Safety Guide

Social disaster

Preventive tips for typical electrical accidents

Infectious Disease

KTX Accidents

Subway Accidents

Forest Fire

Landslides

<https://www.youtube.com/watch?v=ckZGNoZVZq4>

Example:

'Build Back Better'

Korean New Deal (Rep of Korea)

Post COVID-19 Strategy

COVID-19

Korean New Deal

01

Digital Infrastructure

- Strengthening infrastructures for sustainable data
- Expansion of data collection and usage
- Early expansion of 5G network infrastructure
- Expansion of AI data and infrastructure

02

Remote Business

- Expanding foundation for remote service
- Bolstering cloud and cyber security

03

Improving SOC's with Digital Technology

- Digitalization of old SOC's
- Establishment of digital distribution service

Example:

Strengthen digitization to enhance inclusion

(Asia-Pacific, Mongolia)

Digital solutions and connectivity are providing new avenues to attain universal social protection and minimize exclusion errors.

- Across Asia Pacific, **digital identities and digital cash transfers** are two innovations that could be scaled up to enable timely responses, curb corruption and ensure that **no one is left behind**.
- Digital cash transfers are not only quick and efficient, but **in cases like pandemics, can minimize the need for in-person transactions** – thus ensuring assistance reaches those who need it without adding new risks to the beneficiaries or the frontline personnel.
- In Mongolia, a large and sparsely populated country, **digital connectivity** has helped strengthen **outreach to people living in remote areas**.

Tech for DRR Opportunities & Recommendations

Open data and analysis, shared and interoperable software, computing power and other **technology the enablers of improved data science, risk assessment and risk modelling for risk-informed planning and action by all.**

Requiring willingness of people to:

- **work with other disciplines, across cultural, language and political boundaries**
- **create the right regulatory environment for new and urgent work to proceed**

GVR

Global Assessment Report
on Disaster Risk Reduction

2019



Recommendations for leveraging tech to achieve the SDGs

- Leave no one offline
- Use ICTs as an accelerator for innovation and change
- Put people first
- Create innovative, multi-stakeholder partnerships to ensure a coordinated approach

Fast-forward progress: Leveraging tech to achieve the Global Goals. 2017 (ITU)
<https://www.itu.int/en/sustainable-world/Pages/report-hlpf-2017.aspx>

Summary: Technology for DRR as Enablers

- Understanding Disaster Risk Information
 - Making it useful, accessible & actionable
- Supporting Integrated Risk Governance Systems
 - Inter-disciplinary and interoperable for risk-informed decisions
- Partnerships
 - Research, innovation & delivery (interdisciplinary, cross-sectoral)
- Fostering Citizen Engagement & Inclusion
 - People-centred
- Enhancing and Tapping into Capacities
 - Whole-of-society participation that leaves no one behind

Additional Resources

- **Sendai Framework for Disaster Risk Reduction 2015-2030 (UN)**
<https://www.undrr.org/implementing-sendai-framework/what-sf>
- **The Global Assessment Report 2019 (UNDRR)** with links to 2017 Global Risk Atlas & 2013, 2011, 2009 GARs
<https://gar.undrr.org> **GAR19 Chapter 4.1 Changes in Technology and Data Sharing**
<https://gar.undrr.org/chapters/chapter-4-opportunities-and-enablers-change>
- **DRR Technology Solutions for the COVID-19 pandemic (PreventionWeb Collection)**
<https://www.preventionweb.net/collections/covid19-techsolution>
- **UNDRR Science, Technology & Advisory Groups (STAG), Children & Youth, Stakeholder Engagement Mechanism, ARISE** <https://www.undrr.org/implementing-sendai-framework/partners-and-stakeholders>
- **Disruptive Technologies and their Use in Disaster Risk Reduction and Management 2019 (ITU)**
https://www.itu.int/en/ITU-D/Emergency-Telecommunications/Documents/2019/GET_2019/Disruptive-Technologies.pdf
- **30 Innovations for Disaster Risk Reduction 2019 (CWS, IRIDeS, Keio University, UNU-IAS, University of Tokyo)** <https://www.preventionweb.net/publications/view/64473>
- **Online Workshop on Advancing Government Innovation and Leveraging Frontier Technologies for Disaster Risk Reduction and Building Resilience (UNDRR GETI & UNDESA/DPIDG/UNPOG)** <https://bit.ly/3aVwjdg>
- **Lessons from the COVID-19 pandemic: Emerging Technologies in Response to COVID-19: Blockchain, ICT and Data for Pandemic Manageme** <https://youtu.be/91Bb3IRrd4>
- **UNDRR COVID-19 Webinars, Policy Briefs, Technical Guidance** <https://www.undrr.org/drr-and-covid-19>

Thank You

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