

# **30 innovations linking DRR with SDGs**

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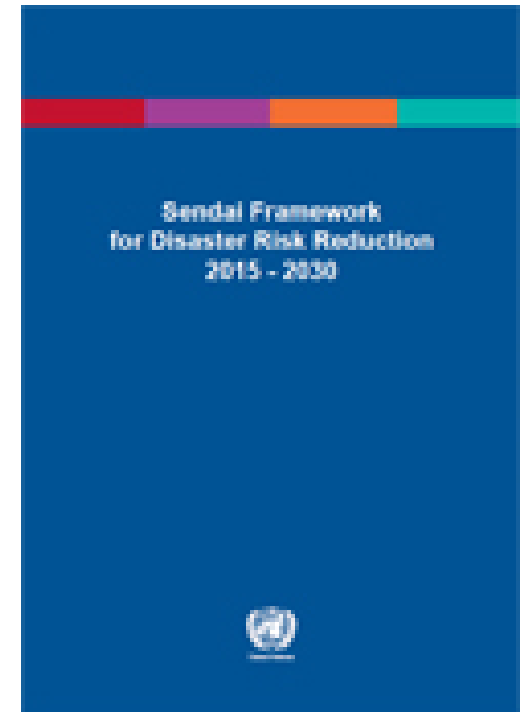
**15 October 2020**

# Innovations in SFDRR

The Sendai Framework for DRR:

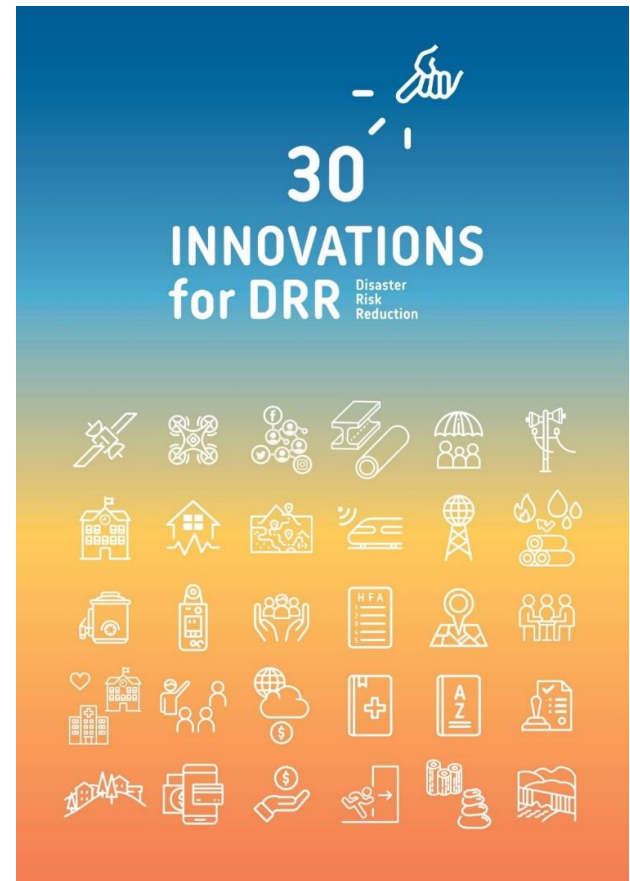
*“Encourages investment in **developing innovation and technology** in long-term and **solution-driven research** in disaster risk management to address gaps, interdependencies, **social challenges**, and **disaster risks**”.*

SFDRR **emphasized the application of science and technology much more heavily than the HFA**



# 30 innovations for DRR

- Jointly published in May 2019 and launched at the Global Platform for DRR by the APRU Multi-hazards program, Tohoku University, UNU, Keio University, University of Tokyo and CWS Japan
- Collects 30 innovations (14 products / 16 approaches) to identify the most important, suitable, and innovative tools
- Includes a survey result on the innovations considered most effective and useful



### 30 INNOVATIONS for DRR

PRODUCTS				APPROACHES			
1	GIS and remote sensing	9	Seismic micro zonation	1	Community-based disaster risk reduction/management	9	Terminologies of resilience and vulnerability (R&V)
2	Drones	10	Earthquake early warning for high speed train	2	Hyogo Framework for Action	10	Post disaster needs assessment
3	Social Networking services (SNS)	11	Doppler radar	3	Hazard mapping	11	Transnational initiative on resilient cities
4	Concrete and steel: building material and infrastructure	12	Disaster resilient material	4	National Platforms for Disaster Risk Reduction	12	Mobile payment: a tool for accessing distribution/funds after a disaster
5	Disaster risk insurance	13	Rainwater harvesting	5	Safe schools and hospitals	13	A dollar for DRR saves seven dollars in disaster response/recovery
6	Disaster prevention radio (Bosai musen) and telemetry system	14	Electricity resistant survey	6	Assessments and index approach: vulnerability assessment, resilient index, sustainability	14	Traditional practices and evacuation behaviors
7	School cum cyclone shelter			7	Crowdsourcing	15	Indigenous DRR technology
8	Seismic code			8	Sphere standard	16	River engineering

# Top 10 innovations

	Innovations
1	Community-Based Disaster Risk Reduction (CBDRR) (A)
2	Hazard mapping (A)
3	Remote sensing and GIS (P)
4	Assessments and index approach: vulnerability assessment, resilient index, sustainability (A)
5	Disaster risk insurance (P)
6	National platforms for Disaster Risk Reduction (A)
7	Social Networking Service (SNS) (P)
8	Drones (P)
8	Disaster resilient material (P)
10	Indigenous DRR technology (A)
10	Crowdsourcing (A)

Further analysis and survey result are in: Disaster risk reduction and innovations  
(*Progress in Disaster Science*)

<https://www.sciencedirect.com/science/article/pii/S259006171930033X>

# 30 innovations linking DRR with SDGs



- Jointly published by the APRU Multi-hazards program, Tohoku University, UNU, Keio University, University of Tokyo and CWS Japan
- DRR innovations by 10 sectors: **Emergency response, Health, Gender, Water, Children, Education, Agriculture, Early warning, Disability, Livelihood**
- Highlighted the link between DRR and SDGs

<https://www.preventionweb.net/publications/view/70713>

# 30 innovations by sector

## EMERGENCY RESPONSE

Linking Cash and Voucher Assistance with Social Protection

Nationalized Cluster Coordination Mechanism

Certification of Humanitarian Agencies

My Timeline: Optimizing Emergency Evacuation per Household

## HEALTH

Participatory Monitoring of Health Security on Disaster

Mobile Clinics

Basic Package for Health Services

## GENDER

Gender Perspective in Disaster Relief

Promoting Women Leadership in Humanitarian and Disaster Risk Reduction in Nepal

Developing Women Community Leaders: Building Capacity for Fijian Disaster Resilience

## WATER

Green Infrastructure

Integrated Water Resources Management

Small-scale reservoir

## CHILDREN

Games for Disaster Risk Reduction

DRR Educational Materials with a Cartoon Character

The First 1000 days

## EDUCATION

Technical Vocational Education and Training

Museums/Memorials for Disaster Risk Reduction

Thematic Incubation Centre for Higher Education in DRR

## AGRICULTURE

Floating Garden for Flood Risk Reduction

Multi-purpose Roof-top Garden

Digital Farming for Agriculture Sustainability

Sustainable Agriculture Kits for Terrace Agriculture

## EARLY WARNING

Earthquake Guard: Earthquake Early Warning System

Water Battery for Flood Early Warning System

Flag-based Cyclone Early Warning System

## DISABILITY

Disability-inclusive Disaster Risk Reduction

Accessible and Universal Design Standards

## LIVELIHOOD

Ecosystem-based Disaster Risk Reduction

A Nexus Approach toward Climate Change, Food Security, and Livelihoods

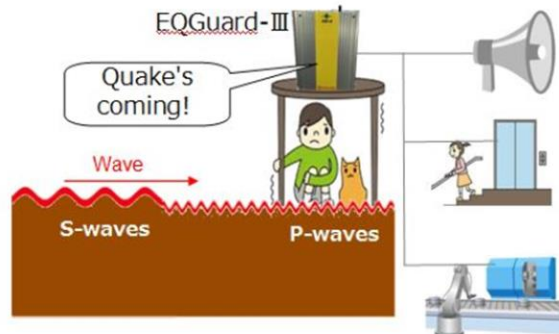
# Top 10 innovations

Top 10 Innovations		Sector
1	Ecosystem-based DRR	Livelihood
2	Integrated water resources management	Water
3	Earthquake guard: EQ early warning system	Early warning
4	A nexus approach toward climate change, food security, and livelihoods	Livelihood
5	Nationalized cluster coordination mechanism	Emergency response
6	Green infrastructure	Water
7	Mobile clinics	Health
8	My timeline: optimizing emergency evacuation per household	Emergency response
9	Technical vocational education and training	Education
10	Disability-inclusive DRR	Disability





Ecosystem based DRR

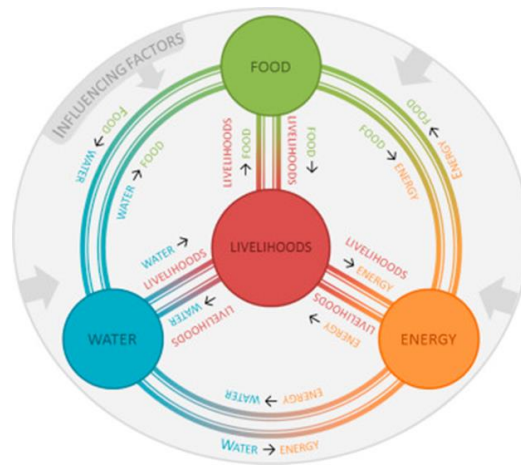


Earthquake guard: EQ early warning



Welfare and Happiness through IWRM

Integrated Water Resources Management



Nexus approach toward climate change, food security, and livelihood



Nationalized cluster coordination mechanism

# Ecosystem-based DRR

- Well-managed ecosystems (wetlands, forests and coastal systems) have multiple benefits.
- They can act as natural infrastructure, **reducing physical exposure to multiple hazards**, providing essential natural resources for food, water building materials.
- **Mangrove rehabilitation and coral reef restoration** are 2 most well-known examples of Eco DRR.



# To increase the application of innovative DRR measures?

- There is a tremendous gap in the interface of science, technology, innovations and policy making.
- Increase co-production between researchers and practitioners, not only working tighter or collaborating ambiguously
- Continue sharing case studies of innovations. Academia needs to take a further step and study how to communicate their research and its results to the public
- Strengthen communication and dialogue among stakeholders, using effective platforms such as the national platforms for DRR
- Understand that innovations can go beyond only high-tech products to include approaches. Without innovative approaches, the products cannot maximize its effectiveness. Approaches could influence people's thinking and behavior. That is a key for sustainability.

# Thanks for the attention!

<http://irides.tohoku.ac.jp/index.html>

<http://aprumh.irides.tohoku.ac.jp/>