



Final Report Question 5/2, SG2:

"Utilizing telecommunications/ICTs for disaster risk reduction and Management"

Period 2018-21

14th September, 2021



Q 5/2 Focus Areas

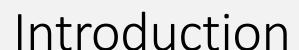
Early warning systems and alerting for disaster risk reduction

Disaster exercises and drills

Enabling policy and regulatory environment

Disaster communications technologies

Country and technology case studies





- The report has been drafted and elaborated by Q5/2 management team based on:
 - Contributions received from ITU-D members
 - Panel discussion on Early Warnings
 Systems including Safety Confirmation
 - Workshop on disaster drills and emerging technologies on disaster management
 - Workshop on Conducting National Level Emergency ICT Drills and Exercises: Guidelines for Small Island Developing States (SIDs) and Least Developed Countries (LDCs)
 - Webinar on "Enabling Policy Environment for Disaster Management including for Covid-19 response"
 - Additional references

Structure of the Final Report



Chapters	Details	
Executive summary		
Chapter 1	Introduction, background, scope and brief overview of the role of telecommunications/ICTs in the overall disaster management cycle	
Chapter 2	Enabling policy and regulatory environment: Policies for early warning, deployment of eqpt, effective response etc	
Chapter 3	Disaster Communications Technologies including related case studies	
Chapter 4	Early Warning and Alert Systems: Use of ICT based alerting systems	
Chapter 5	Drills and Exercises: Guidelines for preparing and conducting disaster communications exercises and drills, assessing and updating plans	
Chapter 6	Country and industrial case studies:	
Chapter 7	Good Practices, Guidelines and Conclusions	
Annex	Detailed Case studies covered at Annexures	

Chapter 1: Introduction 1.1 Background Scope of the report 1.2 1.3 Telecommunications/ICTs and Disaster Management and Relief Use of telecommunications/ICTs in all phases of disasters 1.4 1.5 Enabling policy and regulatory environment [brief description] Disaster communication technologies [brief description] 1.6 1.7 Existing response mechanisms 1.8 Early Warning and Alert Systems [brief description] 1.9 Drills and Exercises [brief description] 1.10 Good Practices and Guidelines [brief description] 1.11 Human factors and stakeholder collaboration 1.12 ICTs for disaster management and smart, sustainable development 1.13 **Accessibility Consideration**





Chapter 2: Enabling Policy and Regulatory Environment

- 2.1 Policies for the deployment of emergency communications systems:
 - High-level policy statement
 - National legislation,
 - National guidelines
 - National disaster risk management plan
 - Checklists
- 2.2 Policies for enabling early warnings, continuity of communications, and more effective response: Policy Considerations
 - Regulatory flexibility: to shorten the approval period for emergency communications deployments
 - Ensuring flexibility: in designing, tailoring and testing alerts for multiple hazards
 - Evolving technologies
 - Evolving emergency alert system
 - Ensuring connectivity: Potential emergency communications needs and the resiliency of networks.
 - Capacity Building: to improve alerting, detection and response
 - Continual Improvement in emergency procedures: By Pilot projects, disaster management drills, and exercises
- Policy interventions related to the COVID-19 pandemic

Chapter 3: Disaster Communications Technologies

1
(B)

3.1	Communication technologies	
	Emerging technologies in disaster communications	
	3.2.1. Mobile applications	
3.2	3.2.2. Utilizing Social network services	
	3.2.3. Integrated public alert	
	3.2.4. The use of manned or unmanned aerial vehicles	
3.3	Emerging technologies in disaster response and Relief	
3.4	Terrestrial and Satellite-based remote sensing technologies helpful in managing natural disasters	
3.5	Satellite communications	
3.6	Big data analysis for disaster management	
3.7	AI for disaster management	
3.8	Internet of Things (IoT) for disaster management	
3.9	Smart city with disaster management	
3.10	Using emergency telecommunication systems during normal times	
3.11	Autonomous distributed ICT system	

Chapter 4: Early Warning and Alerting Systems

1	
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	RU)
1	3

4.1	Use of ICT in Planning for Early Planning and Alerting Systems	
	Deploying early warning systems for disaster risk reduction	
	4.2.1. Common Alerting Protocol (CAP) and its use in Early-Warning Systems	
4.2	4.2.2. EWS for Earthquakes and Tsunamis	
	4.2.3. EWS for Cyclones	
	4.2.4. Early warning systems for torrential rainfall	
	4.2.5 Early Warning Systems for Flooding and Mudslides	
4.3	Broadcast emergency warning systems	
4.4	Early Warning and Alerting System Technology	
	4.4.1 Multi-Hazard Early Warning Systems (MHEWS)	
	4.4.2 Integrated Public Alert and Warning System (IPAWS)	
4.5	Early warning and remote sensing systems	
4.6	Disaster information and relief systems	



Chapter 5: Drills and Exercises

5.1 Guidelines for preparing and conducting disaster communications exercises and drills:

Covered in Annual deliverable report summary

- 5.2 Assessing and updating plans
 - Set the action plan based on outcome of drills and exercises
 - Improve or adjust related policies and procedures
 - Identifying the areas of strength.
 - Secure management support for a regular and continuing program of drills and exercises



Chapter 6: Country and industrial case studies

Table containing Case studies and contributions

Enabling policy and regulatory environment	India(2), Haiti, WFP, New Zealand, Burundi
Disaster Communications Technologies	China(4), ITU-R (3), India(2), Japan(2), USA, ITU-T
Early Warning and Alerting Systems	India(3), China(2), Japan(2), USA(2), Brazil, ITU-T
Drills and Exercises	China, Algeria
Other	Japan(2), ITU-T(2), Congo, USA, China, ITU-R

Chapter 7: Good Practices, Guidelines and Conclusions



- Early Warning Systems
- Disaster drills and emerging technologies on disaster management B.
- Conducting National Level Emergency ICT Drills and Exercises: Guidelines for Small Island Developing States (SIDs) and Least Developed Countries (LDCs)
- Enabling Policy Environment for Disaster Management including for Covid-19 response
- 7.2 Conclusions

7.1

Annexures of the Report

Annexure	Details	
Annexure 1	Detailed case studies: India, Haiti, Japan, USA, China, New Zealand, Brazil, WFP, Congo-DRC, Algeria,	
Annexure 2	ITU intra-sector and inter-sector mapping	
Annexure 3	Information from ITU Groups: ITU-T: SG2, SG5, SG15, ITU-R: WP 4A, WP4B, WP7C	
	Information on workshops and panel sessions	
Annexure 4	 A4.1. Panel Session on Early Warning Systems including Safety Confirmation A4.2. Workshop session on disaster drills and emerging technologies on disaster management A4.3. Workshop session on Conducting National Level Emergency ICT Drills and Exercises: Guidelines for Small Island Developing States (SIDs) and Least Developed Countries (LDCs) A4.4. Webinar on "Enabling Policy Environment for 	
	(LDCs)	



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Please share any feedback via email to ITU-D Study Groups Secretariat devsg@itu.int.

This report is currently available in English. Arabic, Chinese, French, Russian and Spanish editions will follow soon. Download your free copy now!

guidelines based on real-life case studies of members worldwide, whose experiences and lessons learned can

Thank You

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