Role of Broadcasting on Early Warning Dissemination

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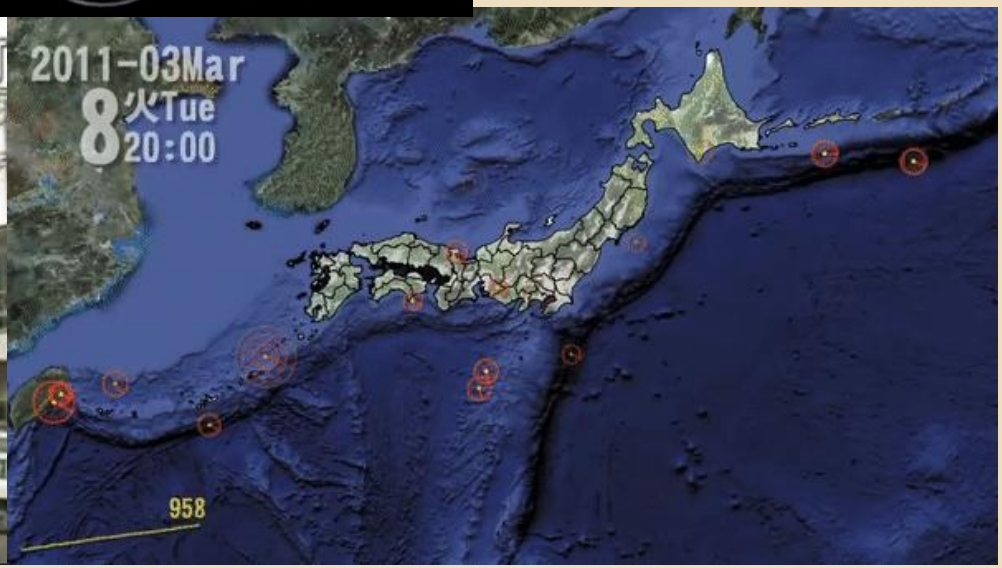
What is EWS?

An integrated system of hazard **monitoring, forecasting and prediction, disaster risk assessment, communication and preparedness activities systems and processes** that enables individuals, communities, governments, businesses and others to take timely action to reduce disaster risks in advance of hazardous events. (UNDRR)

Why early warning systems are key to disaster prevention?

How Communication helps? - Example of An Angel's Voice

An Angel's Voice: Self Sacrifice of Miki Endo (18 July 1986 to 11 March 2011) from Minamisanrisku, Japan



Understand the Role of Broadcasting in EWS

Broadcasting plays a **crucial role** in the Early Warning System (EWS) by serving as a **bridge between authorities and the public**, ensuring that **timely, accurate, and actionable alerts** reach communities at risk of disasters. Its primary objective is to **save lives and minimize damages or losses** by informing people before a hazard strikes.

- ✓ Timely Dissemination of Hazard Alerts (TV, Radio, Print Media, Web Platforms, Mobile Apps / CAP & PA Systems etc.)
- ✓ Wide and Inclusive Outreach (Vulnerable Groups)
- ✓ Promoting Community Preparedness (Drills / Readiness)
- ✓ Combatting Misinformation
- ✓ Efficient Response & Coordination among stakeholders
- ✓ Leveraging Modern Technologies like AI, GIS, Drones, DIGIPIN (DHRUVA), Auto-translation of alerts
- ✓ Trust, Reliability, Credibility and Ethical Responsibility

4 Pillars of Effective Early Warning Systems (UNDRR)

- Risk Knowledge
- Monitoring & Warning Services
- **Communication and Dissemination**
- Response Capability

Broadcasting lies at the heart of pillar 3 and supports all others indirectly.

Traditional Broadcasting Technologies in EWS

- **Radio** (AM/FM, shortwave) / Community Radios

- **Television** (News flash, ticker tapes)

- **Public Address Systems** (Loudspeakers, Sirens)

Examples: AIR, Doordarshan alerts during cyclones , floods and lightnng

Strengths of Traditional Broadcasting

- High penetration in rural and remote areas
- Reliability during power or internet outages
- Culturally familiar and trusted

Modern Broadcasting & Emerging Technologies

Mobile Alerts (Cell Broadcasts, Podcasts, SMS & Apps)

Web and Social Media Live Feeds (Google Alerts, X/Twitter, YouTube, FB, etc)

Satellites and Geo-broadcasts

Drones with loudspeakers & surveillance

AI-driven content tailoring, GIS,Geo-fencing based Alerts

Role of AI in Broadcast-based EWS

- Real-time translation & multi-language alerts
- Geo-tagged Geo-fenced Alerts Customization
- Predictive Risk Modelling & Automated Alert Generation
- Content Optimization for Mass Platforms (TV tickers, IVRS)

Broadcasting and Community Preparedness

- Early alerts → trigger community SOPs
- Disaster drills promoted through radio/TV
- Engaging folk media formats (radio drama, local jingles)
- Building public trust through consistent messaging

Broadcasting and Disaster Response

- Live updates on evacuation, relief locations
- Guiding responders and volunteers
- Reuniting missing persons via mass media
- Addressing misinformation quickly

Challenges in Broadcast-based Warning (1/4)

- Misinformation/disinformation
- Coverage gaps in remote areas
- Language/dialect barriers
- Technical failures during hazards

Challenges in Broadcast-based Warning (2/4)

Gender Distribution of Journalists Reporting on Disasters & Crises (GMMP, 2020)

Events	Gender representation	Print	Radio	Television	Internet	Twitter
Disaster, accident, famine, flood, plane crash, etc	Female	3%	2%	3%	3%	3%
	Male	2%	3%	5%	3%	1%
Climate change, global warming	Female	0%	1%	0%	0%	0%
	Male	0%	0%	0%	1%	0%

Overlooked Voices: Gender, Race, and Sexuality in Disaster News (3/4)

- Critical scholarship on disaster reporting points to the effects on women, marginalized groups and minorities. Hines' (2007) analysis of Indian media coverage of the 2004 Tsunami concluded that overlooking and ignoring gender concerns led to greater marginalization and impact on women.
- McKinnon, Gorman-Murray, & Dominey-Howes (2017) found a heteronormative bias and reporting that did little to improve knowledge of LGBTI vulnerabilities in disasters in Australia and New Zealand.
- Tyree & Hill's (2016) metanalysis of more than 30 studies with a media focus on coverage about or including African Americans impacted by Hurricane Katrina reached three conclusions: perpetuation of racist stereotypes, a mirroring of negative international media coverage of disasters, and media's harmful role in the ensuing State and public response. Disaster coverage tends to be gender-blind. As Seager (2006) underscores, the gendered impacts of Hurricane Katrina were out of the media picture in (U.S) local coverage just as in reporting on the Kobe 1995 earthquake and the Southeast Asian Tsunami in 2004.

Case Study: Breach of Journalism Ethics During Hurricane Reporting

Hurricane Harvey (Houston, USA, 2017)

When Reporting Crosses the Line: A Survivor's Perspective

Best Practices & Success Stories (1/2)

- Japan: NHK Early Warning TV broadcasts
- India: Cyclone Phailin - multi-modal alerts by AIR, TV, SMS
- Indonesia Tsunami 2018 – gaps in broadcast warning
- Odisha: Community radio role in cyclone alerts

Best Practices & Success Stories (2/2)

NHK STRL
Science & Technology Research Laboratories

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Home R&D Publications About us

Broadcast Technology No. 41 Summer 2010 CHALLENGE

Series: Technologies That Support Digital Terrestrial Broadcasting

Emergency Warning Broadcast/ Earthquake Early Warning for Security and Safety

Kenichi Murayama
Principal Research Engineer; Broadcasting Networks Research Division

NHK provides two types of emergency broadcasts: Emergency Warning Broadcasting (EWB) system and Earthquake Early Warning (EEW) system. In addition to an activation signal for receivers, the EWB system

Why the Warning System in Indonesia Failed During Earthquake and Tsunami

Indonesia does actually have an advanced tsunami warning system, including a network of 21 buoys which would have dispatched advance warnings data gathered by deep sea sensors. Nevertheless, hundreds of people have been killed and many still remain missing after a tsunami struck the Indon of Sulawesi on Friday (September 28, 2018), triggered by a powerful earthquake.

Way Forward

- Invest in tech-enabled broadcast tools
- Localize alerts & training
- Improved institutional mechanisms toward gender equality are needed to enable gender-responsive programming.
- Promote media ethics in crisis
- Strengthen last-mile connectivity

Group Exercise

Title: *"Simulated Live Broadcast During an Emergency"*
Objective: Practice crafting and delivering real-time warnings using a simulated hazard scenario.
Divide participants into 3 teams:

- Radio Team
- TV Newsroom Team
- Social Media Live Team

Scenario provided: e.g., Impending Cyclone in Coastal District
Each team must: Prepare and deliver a 60-second warning broadcast in 3 minutes
Address: What, Where, When, Severity, Actions to Take
Ensure clarity, tone, urgency, and no panic

Thank You