

Multi-hazard Early Warning System: Conceptual Review

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Multi-Hazard Early Warning System

The Concept of Multi-Hazard Early Warning System (EWS) gained prominence after 2004 Tsunami. The major arguments:

- Sustainability & Cost effective for operating EWS for low frequency/ high impact hazard such as Tsunami
- To build on commonality existing within end to end Early Warning System for hazards such as Cyclone, Tsunami, Flood, Epidemics etc.

End to End Early Warning System (EWS)

This has four components:

- Risk Assessment
- Detection and Monitoring
- Communication/Dissemination
- Response Capability

Why Multi-hazard EWS

- Three components (Risk Assessment, Communication/dissemination and Response Capabilities) of an end to end EWS have similarities in functions across hazards
- If EWS is developed independently for each hazard, capabilities/expertise developed in these components may not transfer to other systems
- Cost factors, Multiple Hazards such as Flooding during Cyclone etc. may be better managed, EWS can be put up for low probability hazard

How we do Early Warning now

- Scientific Agencies such as IMD, CWC, Dept. of Agriculture etc. detect and monitor hazards and issue warning
- Natural Disaster Management (MHA) coordinates for communication/dissemination
- State Government have the mandate for building adequate preparedness (response capabilities)

How will Multi-hazard EWS operate?

- Specialized Division can be set up as the focal point for EWS
- The Division can develop Expertise in each of the three Components of EWS (Risk Assessment, Risk Communication/Communication Strategies, Response Capabilities)
- The Detection/Monitoring can be undertaken by respective Scientific Agencies and passed on to EWS Division

What can be Mandate of such EWS Division?

- Collect Early Warning from the detecting agency and decide *on its form of communication*.
- Communicate/disseminate through established channels. The Division can have dedicated staffs to integrate/develop communication strategies as their routine job
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- Monitor Response/Compliance of User Groups (Public) throughout Warning Phase

Mandate of EWS Division (contd.)

- Advisory role for State Governments on developing Response Capabilities/undertaking training programs specific to Early Warning Response
- Undertake risk analysis to identify new hazard risk and suggest establishment of EWS for potential hazards

Pilot Project in Tamilnadu

- Multi Hazard Early Warning Project is implemented in Cuddalore District focusing on Communication and Response Capabilities
- Epidemics has been included with hazards such as Cyclone, Tsunami, Flood etc. Training Programs for Health can be coordinated with disaster preparedness programs
- The multi-hazard approach ensures better maintenances of EW Systems

Challenges for multi-hazard EWS

- Technical Competence of EWS Division to understand and interpret issued Warning
- Lead time available to route EW through another agency other than detecting Department
- Maintaining Credibility of such Division in the face of many false alarms
- Issues in transfer process e.g. knowledge acquired for one hazard Cyclone (Natural) to another such as Industrial Disaster (Man made)