

Determination of Hazard from the National Level: Sri Lanka Experience

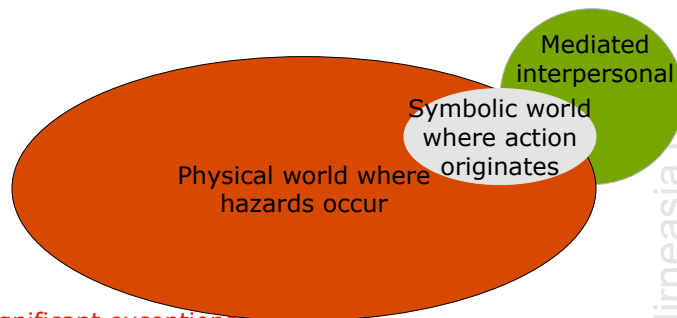
Natasha Udu-gama
25 October 2007
Dhaka, Bangladesh



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Sri Lanka on December 26th, 2004

One in 500 died in Sri Lanka without one minute of official warning



With a few insignificant exceptions,
a world without ICTs



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No "button" pressed for Dec. 26, 2004 Tsunami

- ❑ **00:58:53 UTC:** A monster earthquake, measuring 9.0 on the eastern Indian Ocean near Sumatra, Indonesia, causes an enormous wave packet that starts moving towards northeast and southwest.
- ❑ **02:33 UTC:** A tsunami hit the east coast villages in Sri Lanka.
- ❑ **03:45 UTC:** PTWC received a call from a Sri Lankan Navy Commander inquiring about the potential for further tsunami waves from aftershocks.
- ❑ Geological Survey and Mines Bureau of Sri Lanka knew of the occurrence of the earthquake. Not tasked to issue warnings and did not have the capacity to interpret seismic data



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"Button" pressed on 12 Sept. 2007, but...

- ❑ **4:40pm (IST): Earthquake hits off of southern Sumatra**
- ❑ **5:18pm (IST):** Authorities are saying "warning" at a time when only "alerts" should be sent out.
- ❑ **5:55pm (IST):** Radio and tv stations have issued a tsunami warning. PTWC issues a tsunami watch for Sri Lanka.
- ❑ **5:57pm:** The DMC issues a tsunami warning, people near beaches urged to evacuate.
- ❑ **6:00pm:** Sarvodaya DD reports that the HIH will be manned overnight by two HIH personnel. If required a voice alert by the ED will be issued to all Sarvodaya villages.
- ❑ **6:05pm:** SL's largest phone provider, Dialog Telekom, is having difficulty obtaining information from the DMC. Then the phone lines start getting cut. Only SMS messages seem to be getting through.



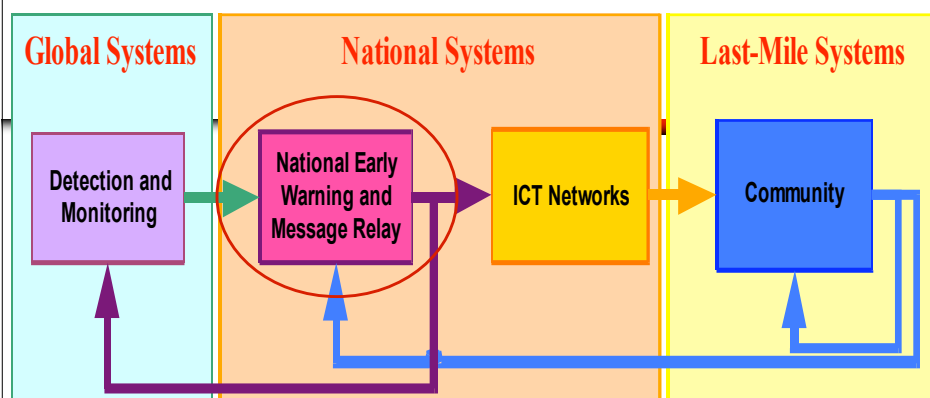
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“Button” pressed on 12 September, but... (cont’d)

- ❑ **6:11pm:** Tsunami warning confirmed for the eastern, northern and southern SL coasts from the Met Dept..
- ❑ **6:25pm:** DMC sends another SMS warning for North, Eastern and Southern coasts, people are to move from the coast.
- ❑ **6:26pm:** CNN reports there is no indication that a tsunami has been generated
- ❑ **6:36pm:** TV- Met Dept. reports existence of a tsunami warning. People advised to stay away from the coastline.
- ❑ **6:44pm:** MDMHR secretary says that people need to be vigilant and evacuate.
- ❑ **6:48pm:** A small tsunami has hit Padang, Indonesia. Sri Lanka expects a small tsunami by 7:30.
- ❑ **7:34pm:** The DMC sends another SMS lifting the tsunami warning. USGS has increased quake magnitude to 8.2.
- ❑ **8:05pm:** CNN reports tsunami threat passed. Dialog Telekom has made a cell broadcast the following message "Tsunami Warning Avoi".

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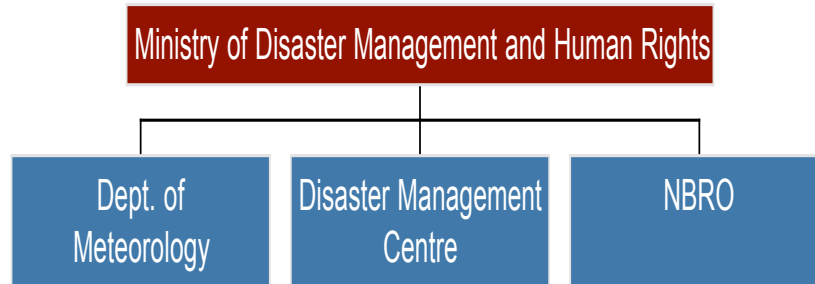
Hazard Detection and Notification Chain of Systems



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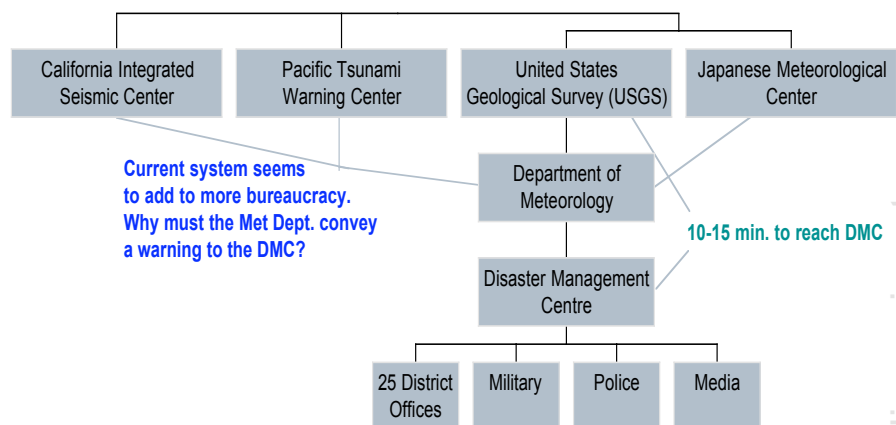
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Disaster Management in Sri Lanka - Operative Structure



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Disaster Warning Process



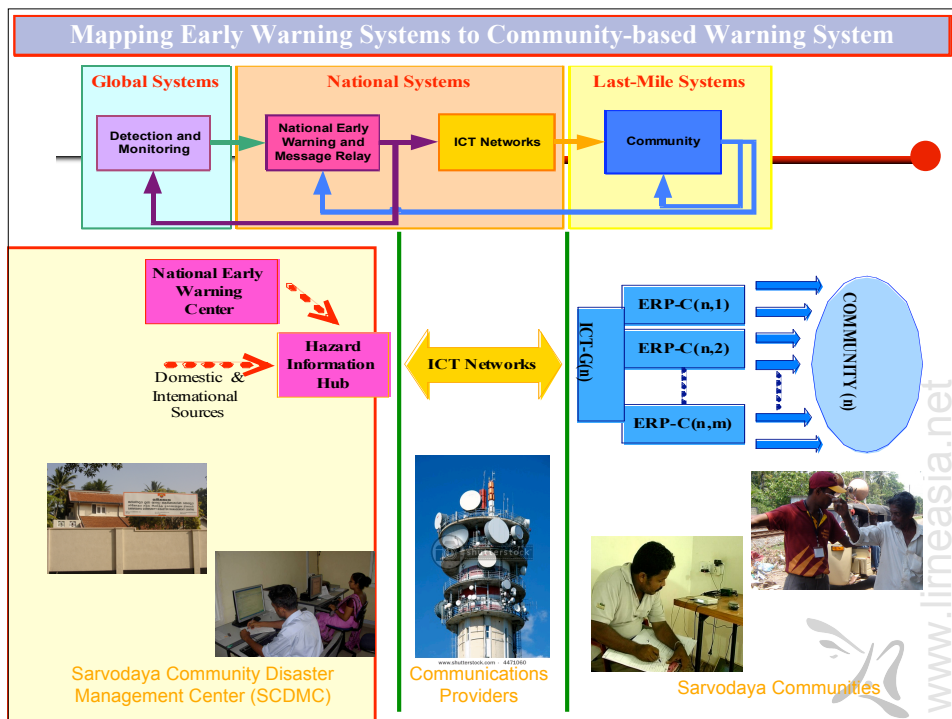
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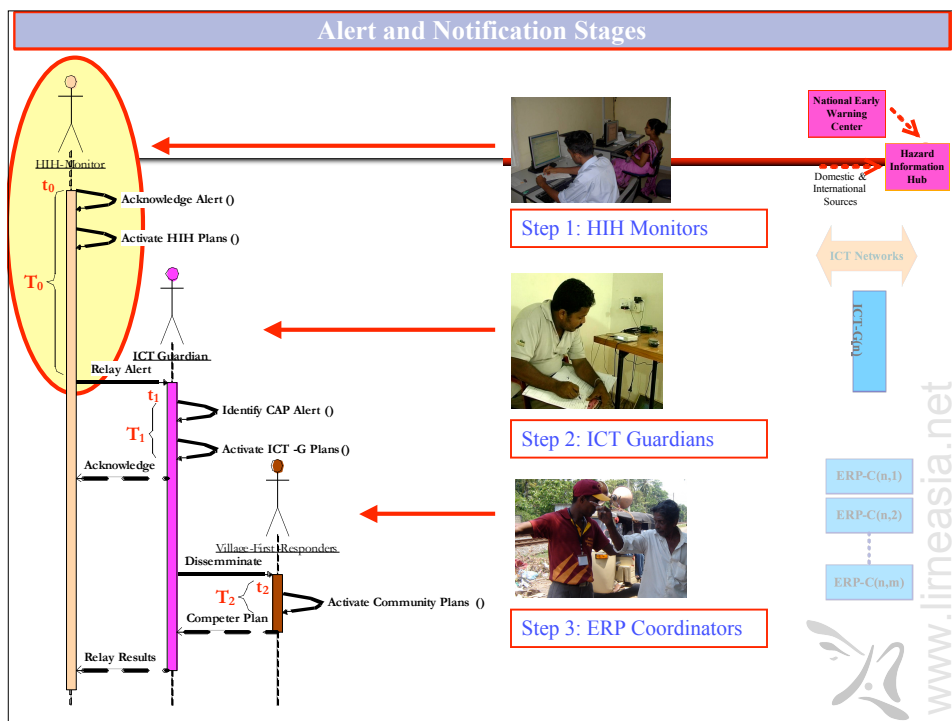
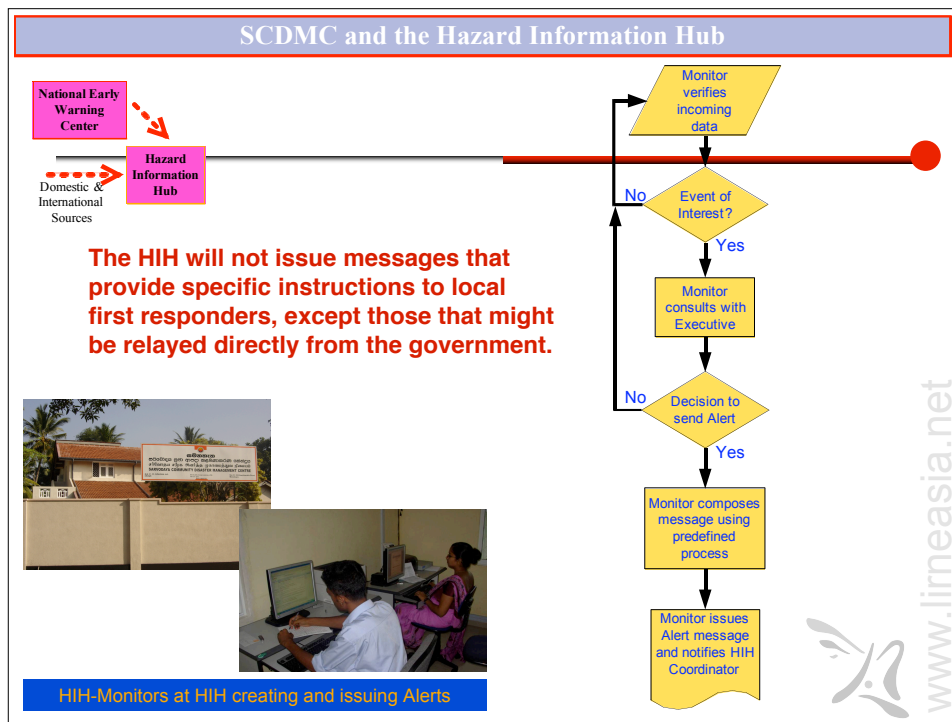
Categories of Tsunami Notification in SL

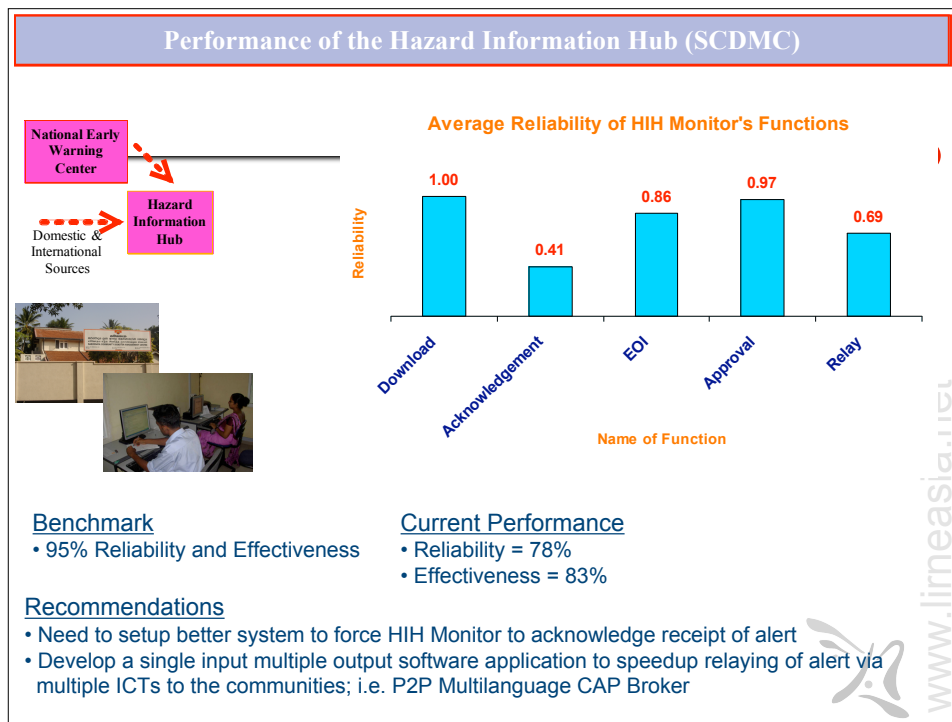
- $6.5 < M < 6.9$ EWC officials keep close watch on the sea level situation. **No official bulletin will be issued.**
- $7.0 < M < 7.4$ Earthquake ***Information*** Bulletin will be issued as soon as possible stating the location, magnitude and the outlook.
- $7.5 < M < 7.7$ Tsunami ***Advisory*** Bulletin will be issued requesting people in the coast line to be vigilant and to be ready for evacuation at short notice.
- $7.8 < M$ A Tsunami ***Warning*** will be issued with evacuation notice.



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Gaps in the determination of a hazard at the national level

- ☐ Politicians in charge of decision-making on creating and disseminating warnings
 - ☐ No precise means of sending warnings to community members (i.e. chain ends at mid-level warning recipients)
 - ☐ Disaster notification levels not explicitly delineated for use in all hazards (only vaguely tsunami)
 - ☐ Communities are not participants in the warning process but only recipients of government mandated preparedness and mitigation programs
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