



**International Telecommunication Union**

# **Implementing CAP for Hazard Warning in Sri Lanka**

**Gordon A. Gow**

**University of Alberta (Canada)**



ITU-T/OASIS Workshop and Demonstration of Advances in ICT Standards for Public Warning  
Geneva, 19-20 October 2006



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## 25 December 2004, 15:15hrs local time, Pacific Tsunami Warning Centre, Hawaii

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TSUNAMI BULLETIN NUMBER 001  
PACIFIC TSUNAMI WARNING CENTER  
0315 PM HST 25 DEC 2004

TO - CIVIL DEFENSE IN THE STATE OF HAWAII

SUBJECT - TSUNAMI INFORMATION BULLETIN

THIS BULLETIN IS FOR INFORMATION ONLY. NO ACTION REQUIRED.

AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME - 0259 PM HST 25 DEC 2004  
COORDINATES - 3.4 NORTH 95.7 EAST  
LOCATION - OFF W COAST OF NORTHERN SUMATERA  
MAGNITUDE - 8.0 MOMENT

### EVALUATION

BASED ON ALL AVAILABLE DATA A DESTRUCTIVE PACIFIC-WIDE TSUNAMI IS NOT EXPECTED AND THERE IS NO TSUNAMI THREAT TO HAWAII. REPEAT. A DESTRUCTIVE PACIFIC-WIDE TSUNAMI IS NOT EXPECTED AND THERE IS NO TSUNAMI THREAT TO HAWAII.

THIS WILL BE THE ONLY BULLETIN ISSUED FOR THIS EVENT UNLESS ADDITIONAL DATA ARE RECEIVED.

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## 26 December 2004, 08:27 local time Kalumnai, Sri Lanka

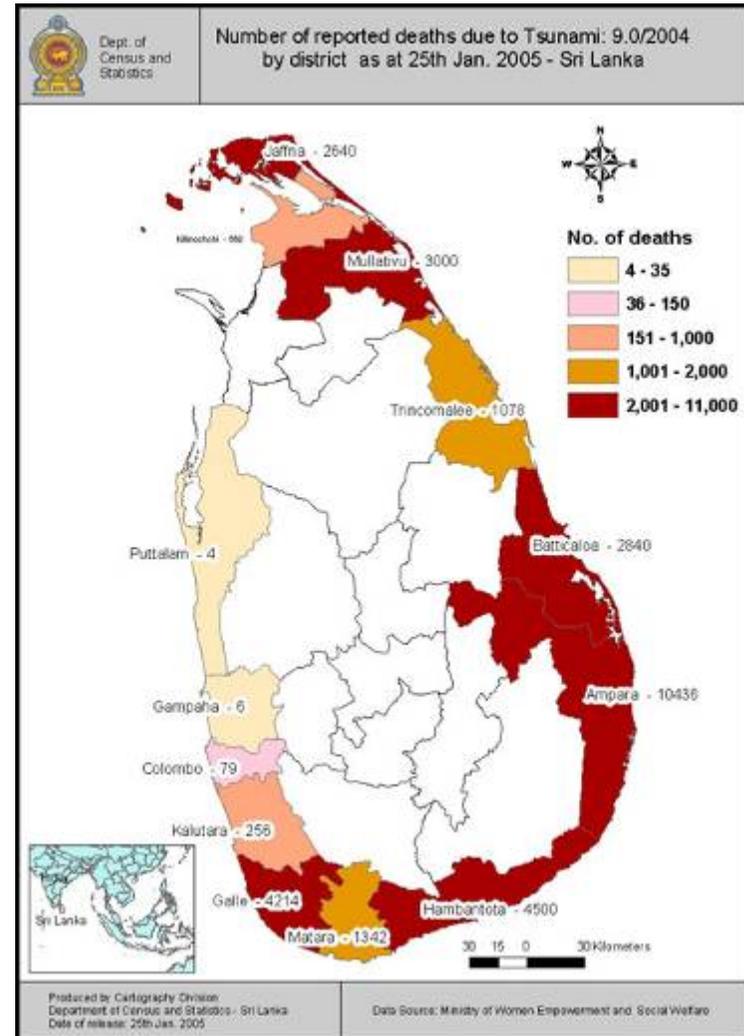
- o 06:59 earthquake off the coast of Sumatra
- o 07:06 GSMB in Colombo alerted of quake
- o 07:14 PTWC issues bulletin

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- o 08:04 PTWC revises bulletin
- o 08:27 Kalumnai hit
- o 08:55 Trincomalee hit

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- o 09:30 Galle, Kalutara





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## Last-Mile Hazard Information Dissemination Project (LIRNEasia/Sarvodaya)



- Expert Consultation Jan. 26, 2005 (Colombo)
- Concept paper, “NEWS:SL” (March, 2005)
- Research proposal to IDRC (Oct. 2005)
- Planning workshop (CAP is introduced) (Jan. 2006)
- Hazard Warning Relay Network begins operation (July 2006)
  - CAP Profile and Operational Guidelines in place



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## Last Mile Hazard Information Dissemination Project



- Need to reach rural and remote communities:
  - Lack of infrastructure and limited resources
- Evaluate the suitability of different ICTs deployed in different settings for effective warning:
  - 32 villages, varied levels of development



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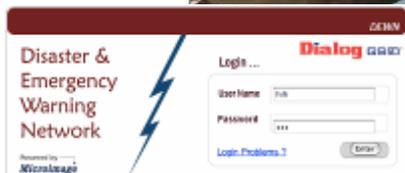
# Sarvodaya's Hazard Information Hub and Relay Network



mobile phone



VSAT/Internet



fixed wireless

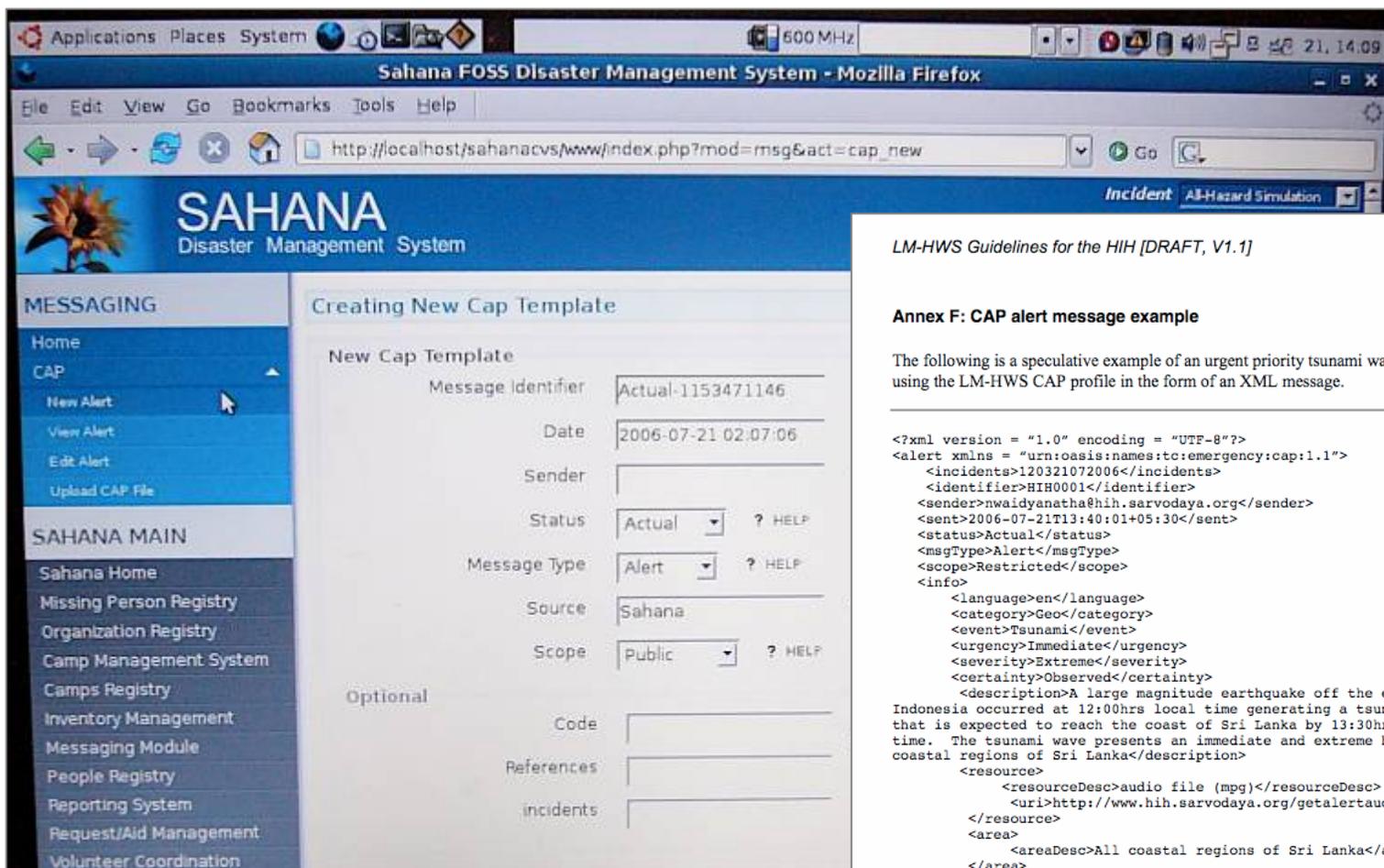


satellite radio



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# Common Alerting Protocol (CAP)



**LM-HWS Guidelines for the HIH [DRAFT, V1.1]** 40

**Annex F: CAP alert message example**

The following is a speculative example of an urgent priority tsunami warning issued using the LM-HWS CAP profile in the form of an XML message.

```
<?xml version = "1.0" encoding = "UTF-8"?>
<alert xmlns = "urn:oasis:names:tc:emergency:cap:1.1">
  <incidents>120321072006</incidents>
  <identifier>HIH0001</identifier>
  <sender>nwaidyanatha@hih.sarvodaya.org</sender>
  <sent>2006-07-21T13:40:01+05:30</sent>
  <status>Actual</status>
  <msgType>Alert</msgType>
  <scope>Restricted</scope>
  <info>
    <language>en</language>
    <category>Geo</category>
    <event>Tsunami</event>
    <urgency>Immediate</urgency>
    <severity>Extreme</severity>
    <certainty>Observed</certainty>
    <description>A large magnitude earthquake off the east coast of
    Indonesia occurred at 12:00hrs local time generating a tsunami wave
    that is expected to reach the coast of Sri Lanka by 13:30hrs local
    time. The tsunami wave presents an immediate and extreme hazard to all
    coastal regions of Sri Lanka</description>
    <resource>
      <resourceDesc>audio file (mpg)</resourceDesc>
      <uri>http://www.hih.sarvodaya.org/getalertaudio_en</uri>
    </resource>
    <area>
      <areaDesc>All coastal regions of Sri Lanka</areaDesc>
    </area>
  </info>
</alert>
```

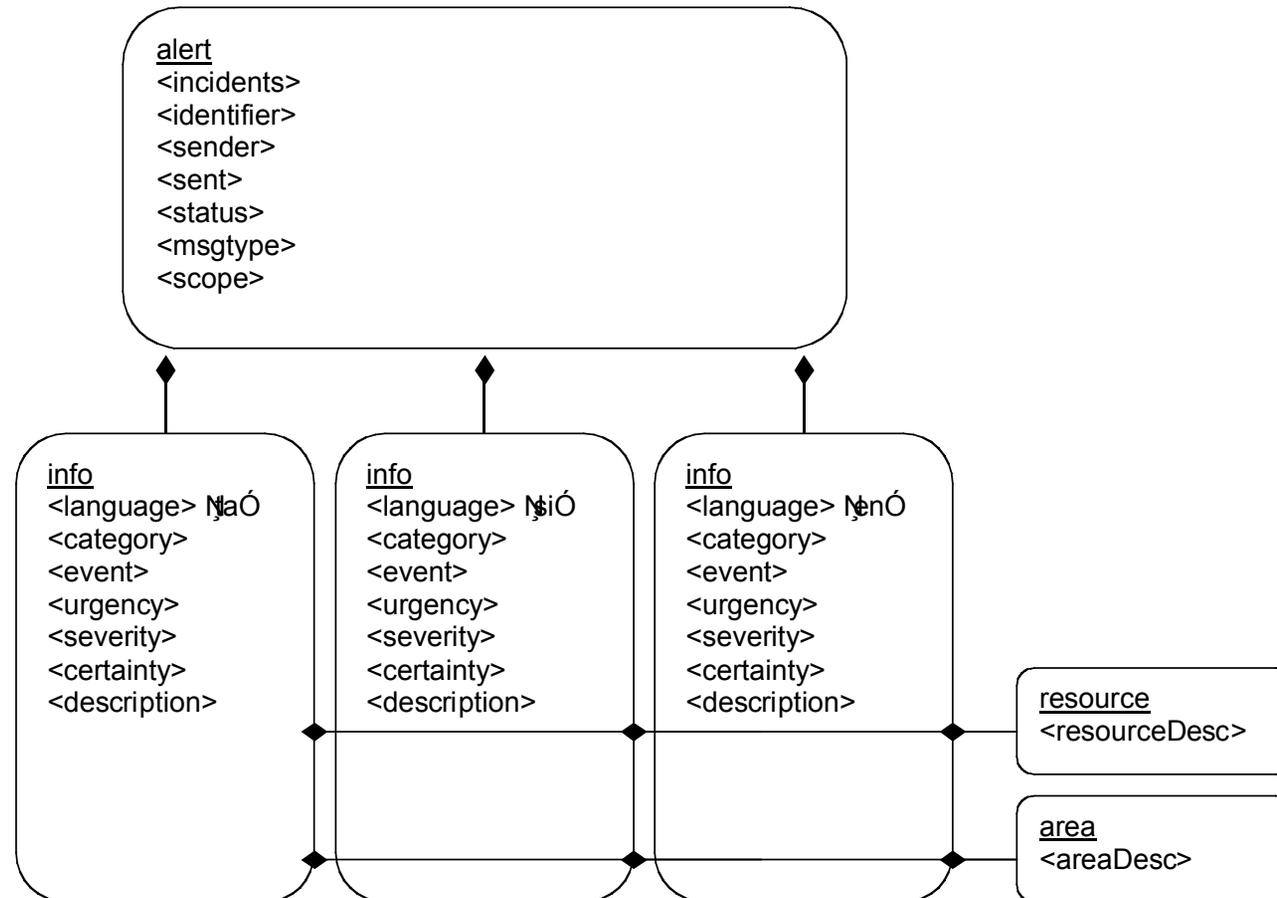


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## Special considerations

- o Events of Interest <incidents>
- o Government messages <description>
- o Message priority profile
  - Severity, urgency, certainty
- o <status> element and testing
- o <scope> always restricted
- o <language> en, si, ta
  - Handling of special scripts
- o <resources> audio file

# CAP Message Structure





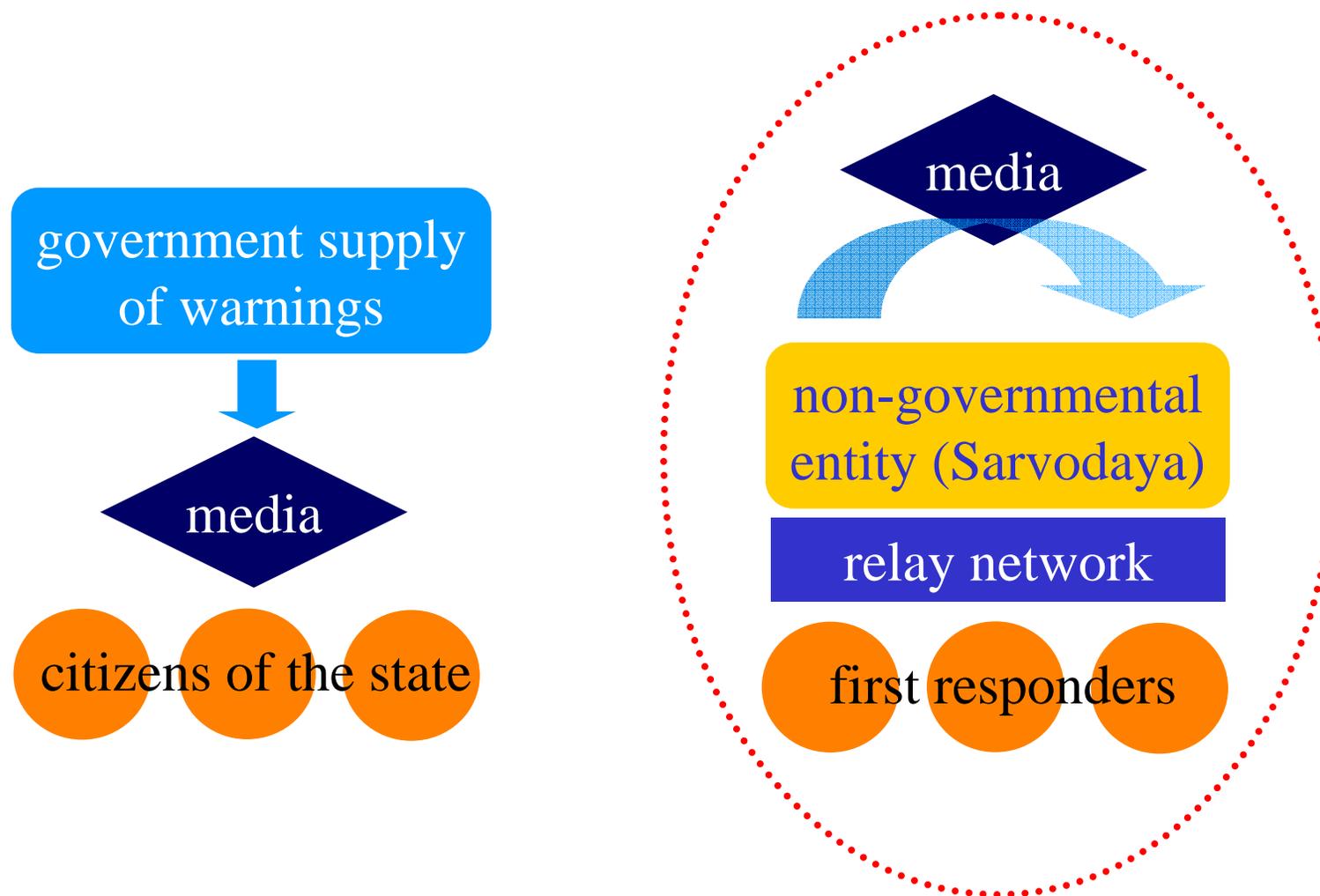
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## Regional Coordination

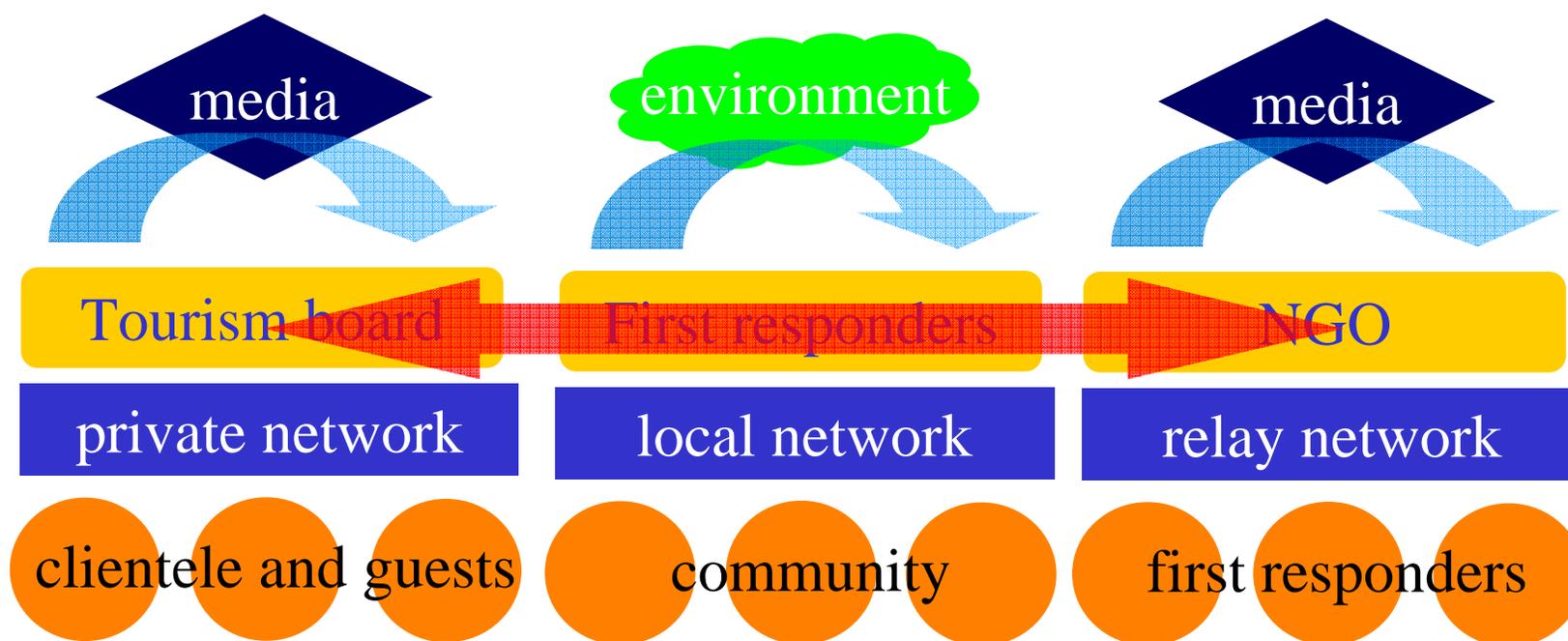
“As countries move forward to develop a new tsunami warning system, they must ensure that such efforts carefully match with existing regional and national warning capacities in order to enable interoperability with other warning systems ... international coordination on implementing CAP for all hazards is an essential step toward this broad-scale interoperability.”

—NEWS/SL concept paper (2005, p.18)

## Institutional Arrangements for Public Alerting



## Coordinating for information exchange among grassroots-based systems





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## Coordination Issues with CAP in Sri Lanka

- o <alert>
  - <identifier>common format?
  - <sender>authorized users?
  - <sent> time stamp (when, what format?)
  - <scope> restricted? public?
- o <info>
  - <category> uncertain role for LM-HWS
  - Standard <event> common terminology?
  - <event> "Government message"
- o <area>
  - <areaDesc> interoperability with addressable satellite radio and other systems?



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## Issues for Consideration

- Need for interoperability between community-based warning systems
- Decisions with path dependent consequences might occur in several sectors independently (e.g., tourism, NGO)
- What is the appropriate forum in which to establish regional coordination for CAP implementation?
- Where is the appropriate focus for standardizing practice while respecting the need for diversity?
- How are best practices to be communicated and are they equally applicable to both developing and developed states?