Using the
Common Alerting Protocol
in a
Early Flood Warning Project
in the Caribbean

Marvin Forde, Cherie Pounder

Presented by
Marvin Forde
Technical Officer (I)
Caribbean Institute for Meteorology and Hydrology
Husbands, St. James
Barbados

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OUTLINE

- Natural hazards in the Caribbean Region
- Socioeconomic impacts of these hazards
- Agencies involved in disaster mitigation and response
- Possible projects for CAP
- Conclusion

Natural Hazards

- Hurricanes (seasonal June – November)
- Severe Thunderstorms
- Storm Surges
- Flooding
- Land Slides
- Drought
- Volcanoes
- Dust Events (Sahara Dust)

Human Induced Hazards

- Fire

- Oil Spills

- Chemical Explosions

- Water Pollution

- Accidents

- Volcanoes

- Bomb Threat

Socioeconomic Impacts

- 2nd most hazard prone area in the world

- Regular Annual disaster losses of US $3 billion

- Significant loss to social and productive sectors

- >68% of GDP

- 60% of population, 70% of economic activity is within 2 miles of the coastline

Information from December 2009, CDEMA

Recent Hazard Events

Haiti Earthquake, 2010
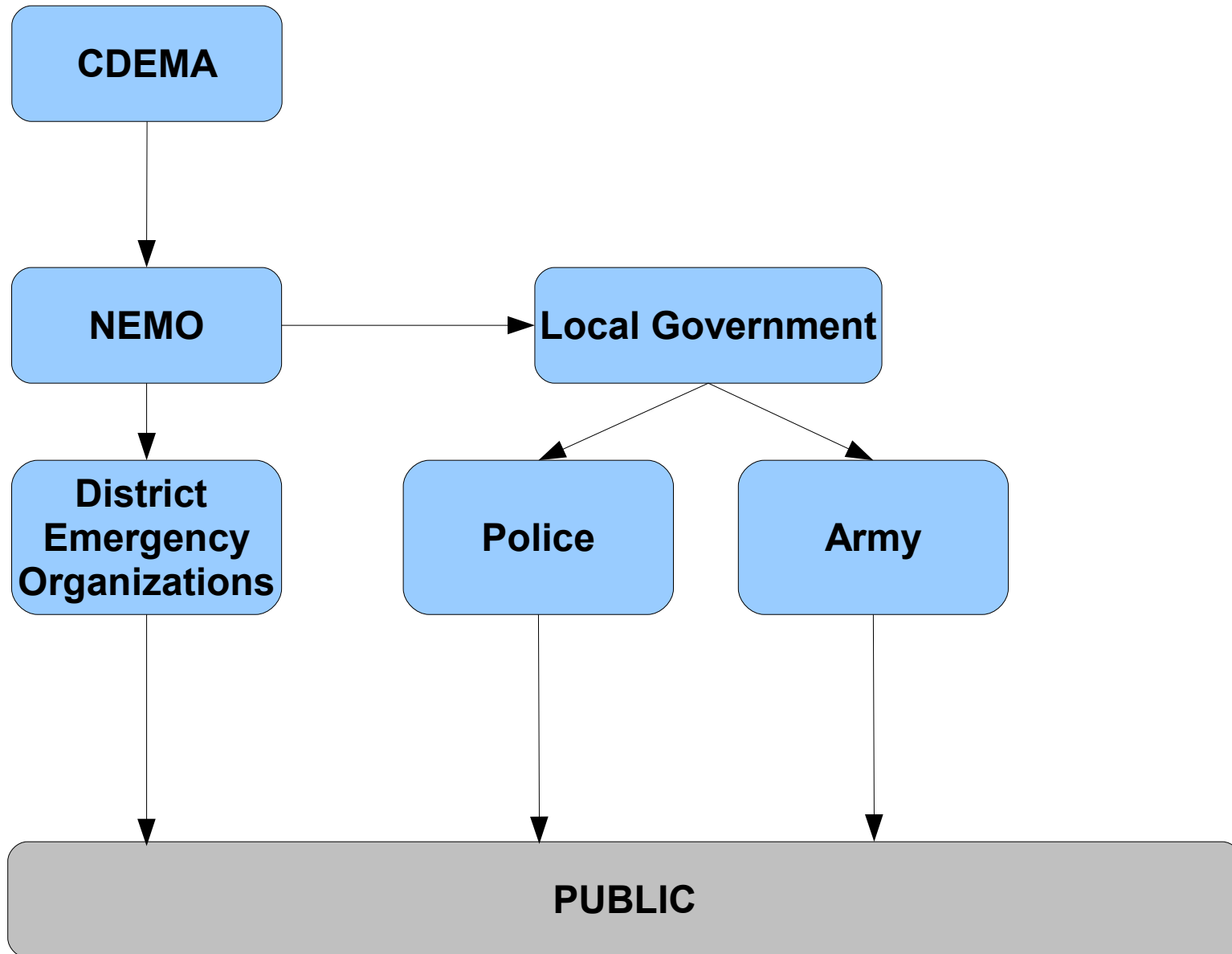

St. Lucia, Hurricane Tomas 2010

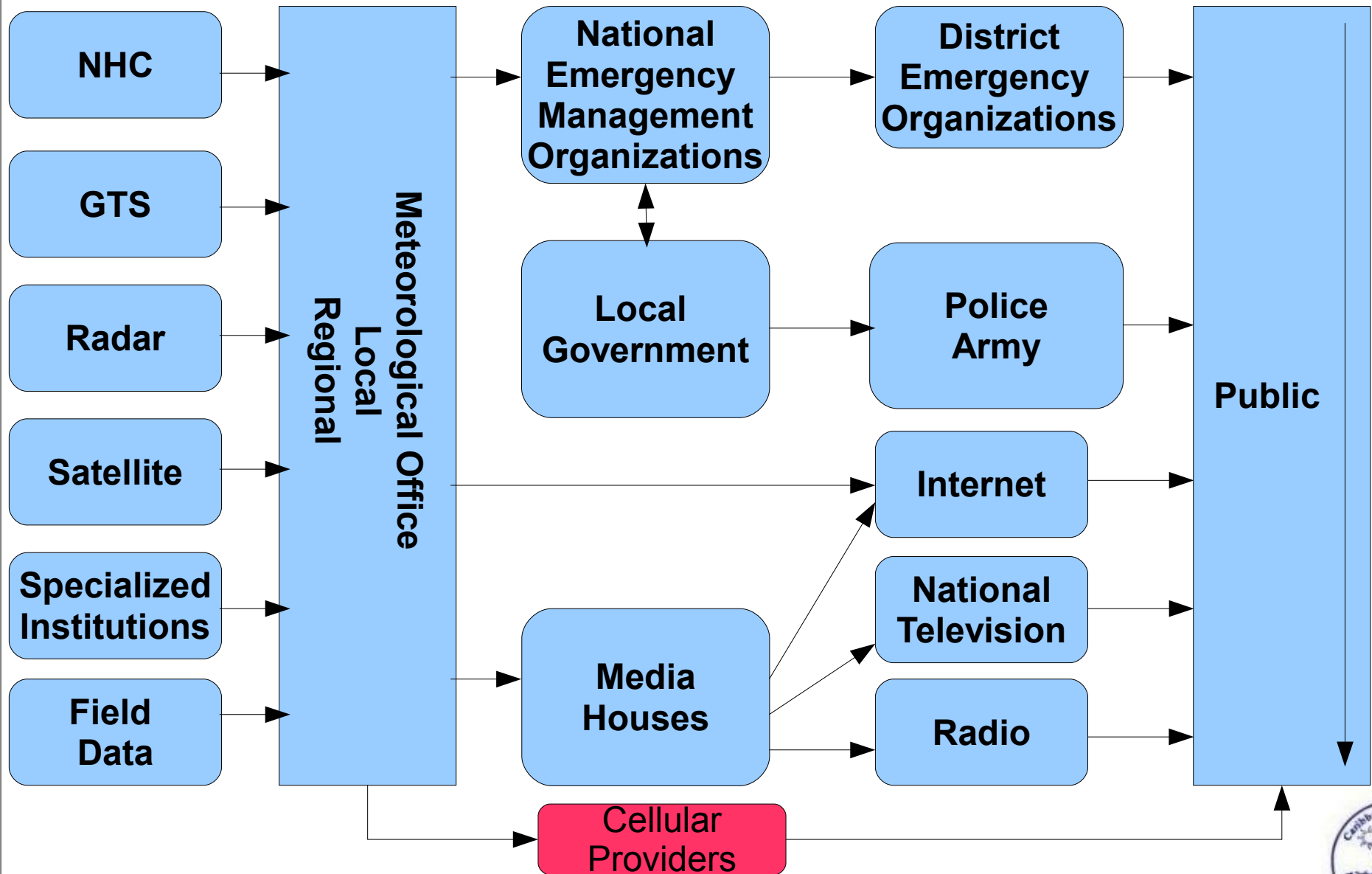**Flooding St. Vincent 2010**
(Acknowledgement Caribbean 360)

St. Lucia, Hurricane Tomas 2010
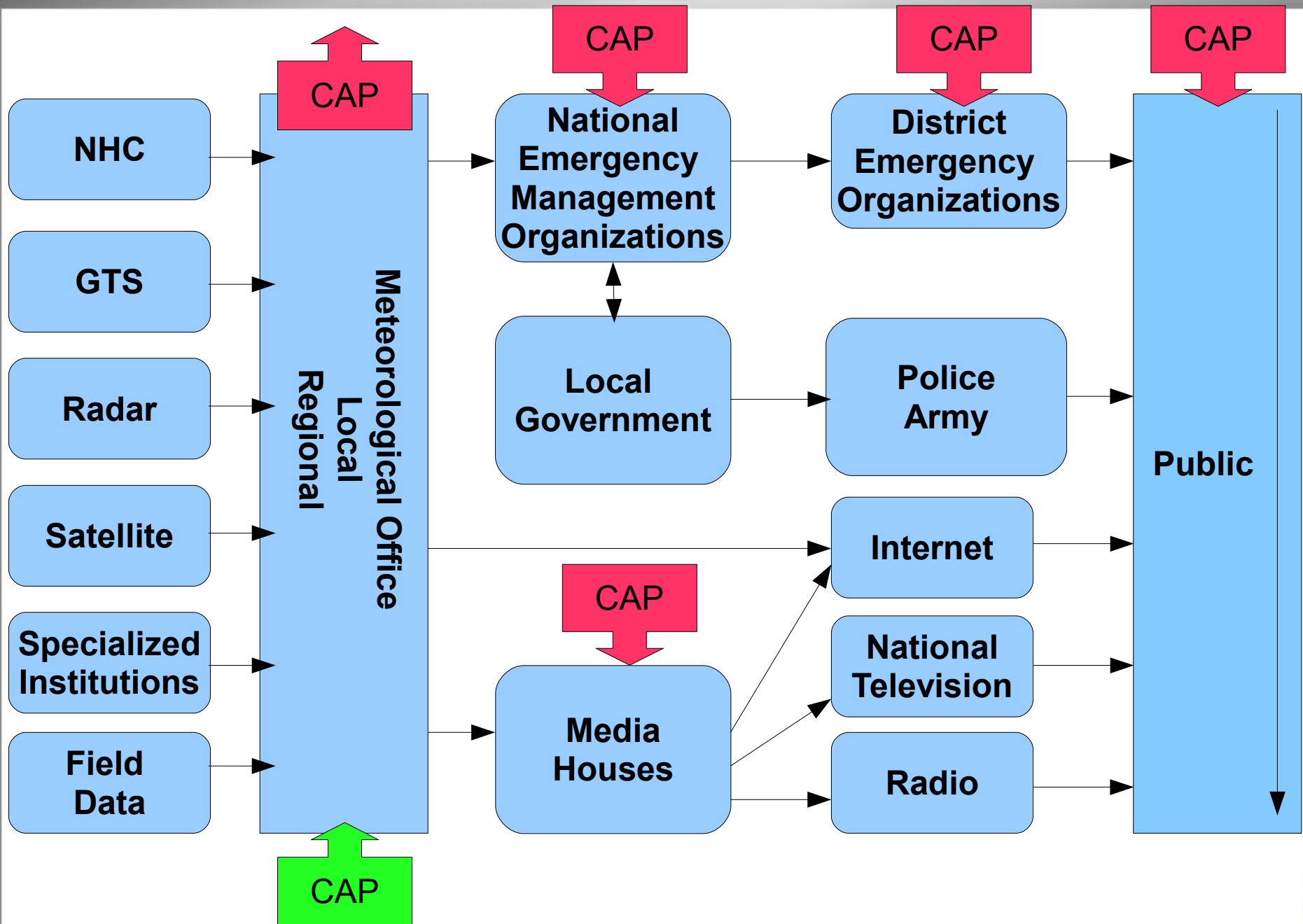
Emergency Management Structure

Information Dissemination
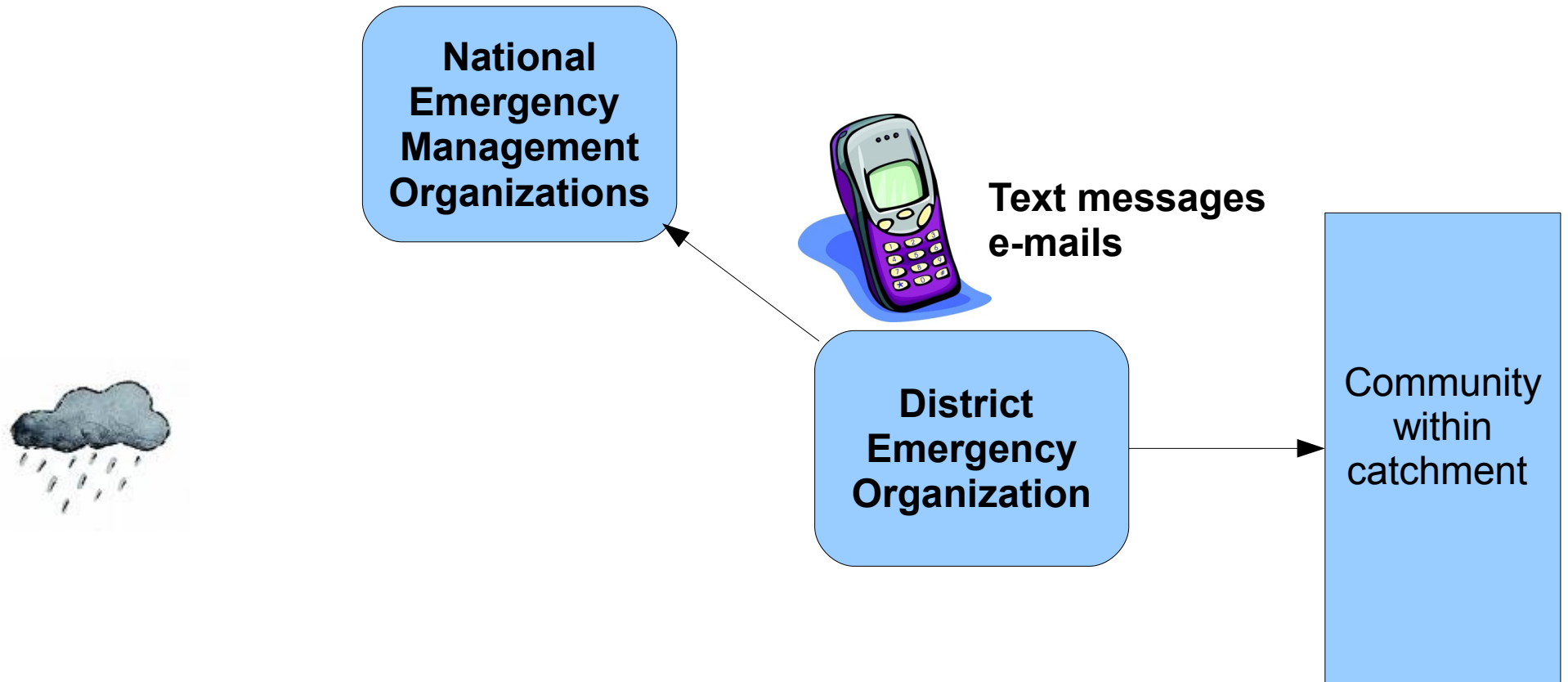
Possible CAP inclusions

Early Flood Warning Project (CADM)

- Status of disaster preparedness in the CDEMA participating states conducted in May 2001 identified floods as the most common event occurring in 90% of the participating states (1996 – 2000). However, only 25% of these countries have any plans to guide disaster management activities for this hazard.

- The second phase of the of the Caribbean Disaster Management (CADM II) Project is currently being implemented by the Caribbean Disaster Emergency Management Agency (CDEMA) through the CARICOM/Japan Technical Cooperation Agency agreement

- The project seeks to provide flood hazard maps and community disaster management plans for the pilot cachments located in Dominica, Grenada, Guyana and St. Lucia. Early Flood Warning Systems have been conceived and developed as part of the community disaster management plan.

- **A number of technical issues were realized as it relates to the specifications of the early flood warning setup in each country**

Information Dissemination (CADM)

National Emergency Management Organizations

Text messages e-mails

District Emergency Organization

Community within catchment

Information Dissemination (CADM)

- District Emergency Organization (text message or email)

  - Community Leader (Guyana)

- National Emergency Management Organization (email)

- Text message format

  - "Alarm Triggered – (no. of tips) in last minute"

- Determination is made and relevant actions taken

Using CAP in CADM

The CADM project information dissemination structure allows for easy implementation of the CAP, however

- Areas to be addressed

    - Triggering criteria

    - Multiple categories based on rainfall intensity and duration

        - Meteorological (flooding)

        - Geophysical (landslides)

- Areas to be developed

    - Software implementation

    - Hardware implementation

Research at CIMH

- In-house development of data logging systems for various sensors comparable to commercially produced systems at a fraction of the cost.

  - Embedded System (ES)

  - Computer Based (CB) (linux)

- Completed a rain gauge data logger with SMS alarm capabilities (ES)

  - Triggering of the SMS alarm

    - Based on a built-in IDF/DDF Curve

    - Based upon a predetermined intensity

- Completed a rain gauge data collect and distribution system (ES & CB)

  - Storage of 1 minute rainfall amounts

  - Distribution of the data to ftp server

  - Email notification on process failures

With these systems being all developed in-house at CIMH, CAP will be another option alarm notification.

Conclusion

- The Common Alerting Protocol is an effective tool that has its benefits

    - With its proposed inclusion within a regional Flood EWS project, its positive effects will be seen throughout the region.

- The hardware and software costs related to the upgrades needed for the implementation could be a limiting factor

- Relatively high cost in the region associated with near real time data transmission may also impede the CAP implementation

Thank you.

Any Questions?