

# Elements of a community-based warning system\*

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\* and its relation to a public warning system

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**LIRNEasia**

Learning Initiatives on Reforms for Network Economies

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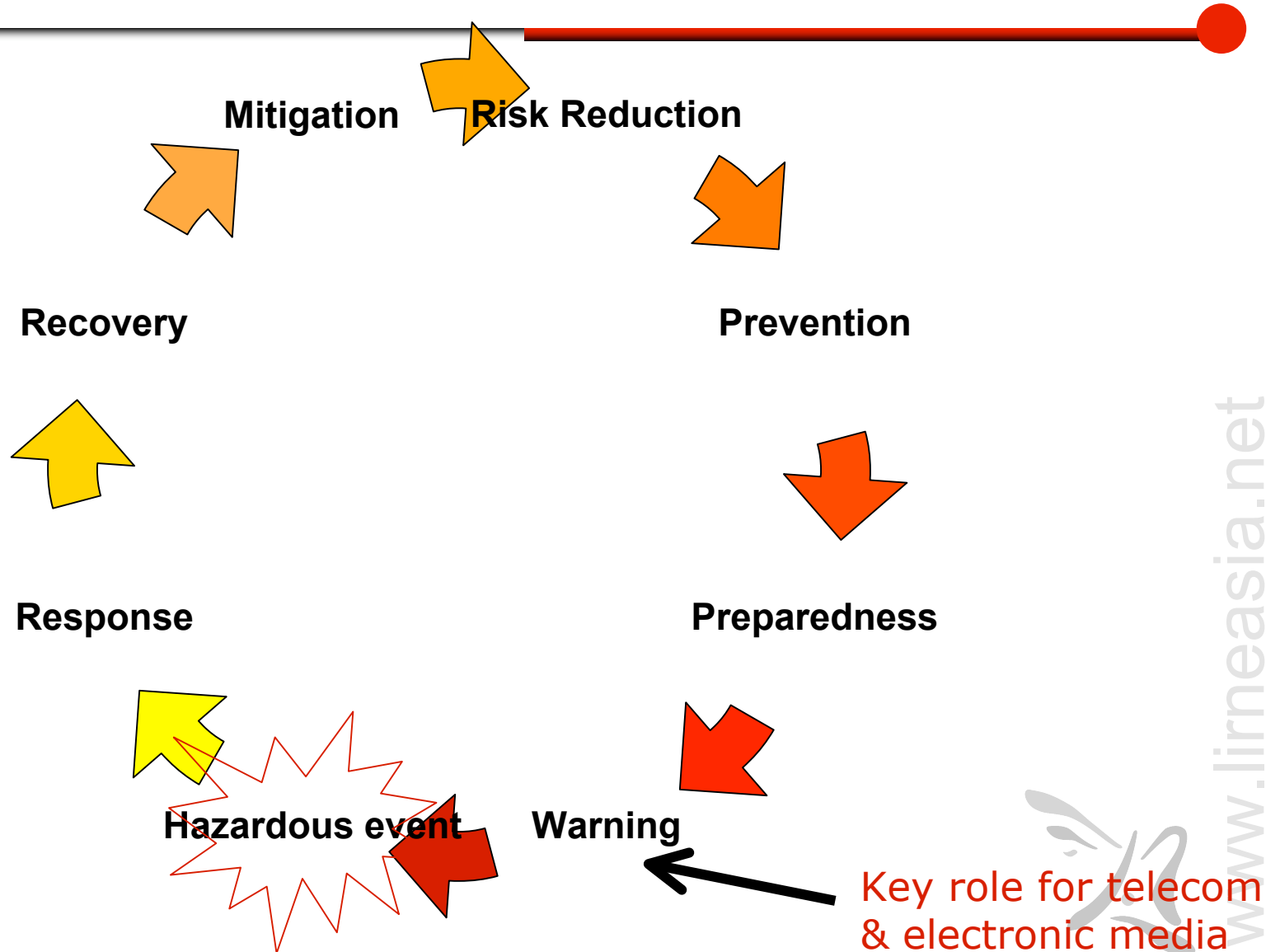
# Agenda

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- ❑ The disaster cycle and the role of ICTs in disaster risk reduction through warning
- ❑ Parallels between the classic public warning model and the community-based hazard information model
  - Early warning center -- Hazard information hub
  - Communication to first responders – communication to community leaders
  - Last mile

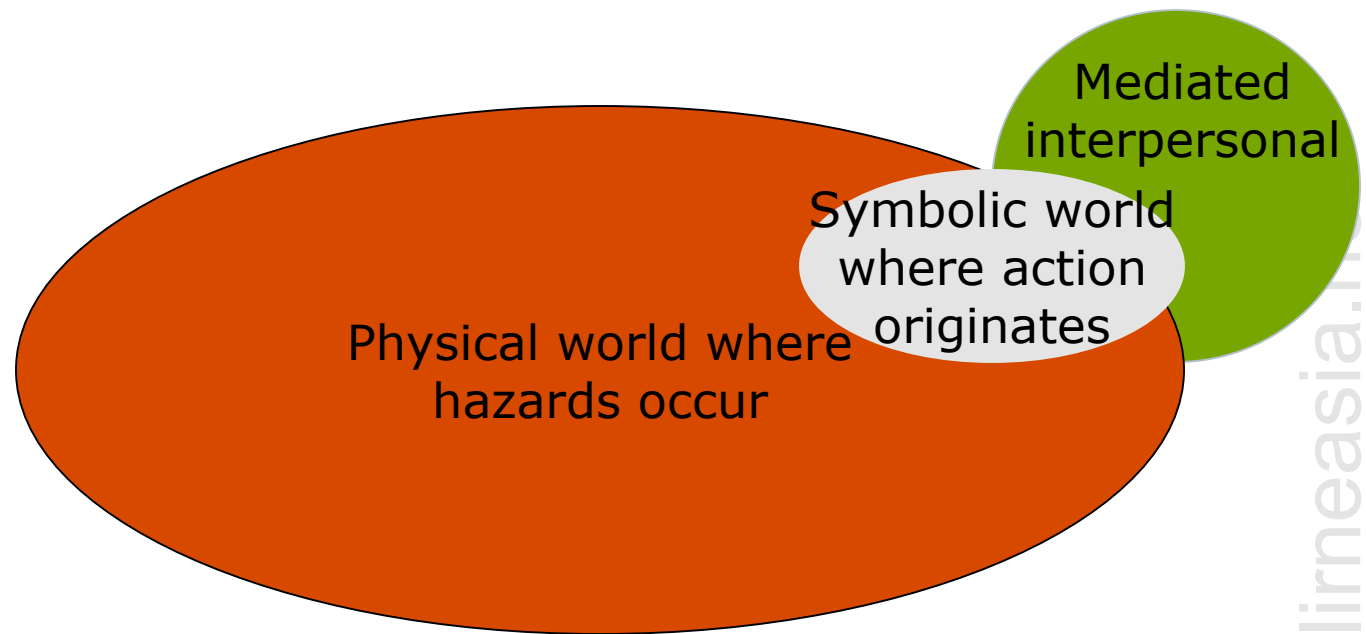


# The disaster cycle



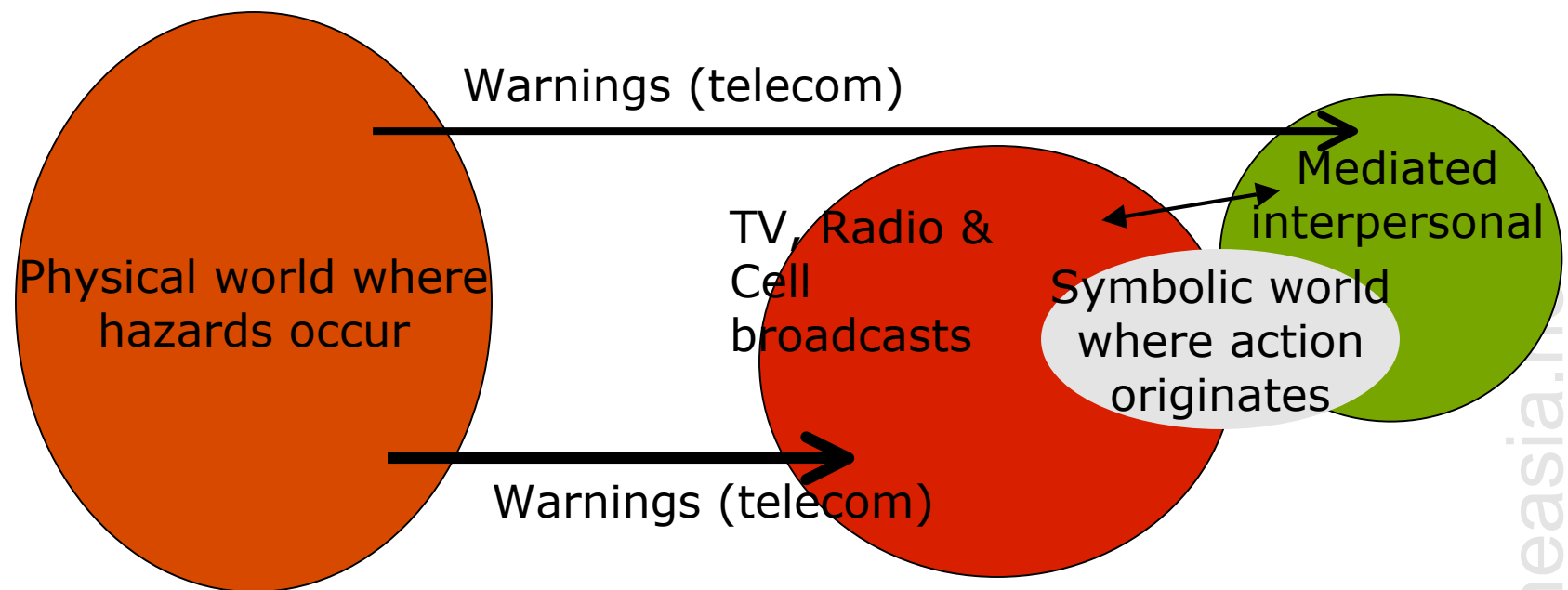
# Physical and symbolic worlds, absent linking technologies

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# The physical, the symbolic & their linking through ICTs, simplified

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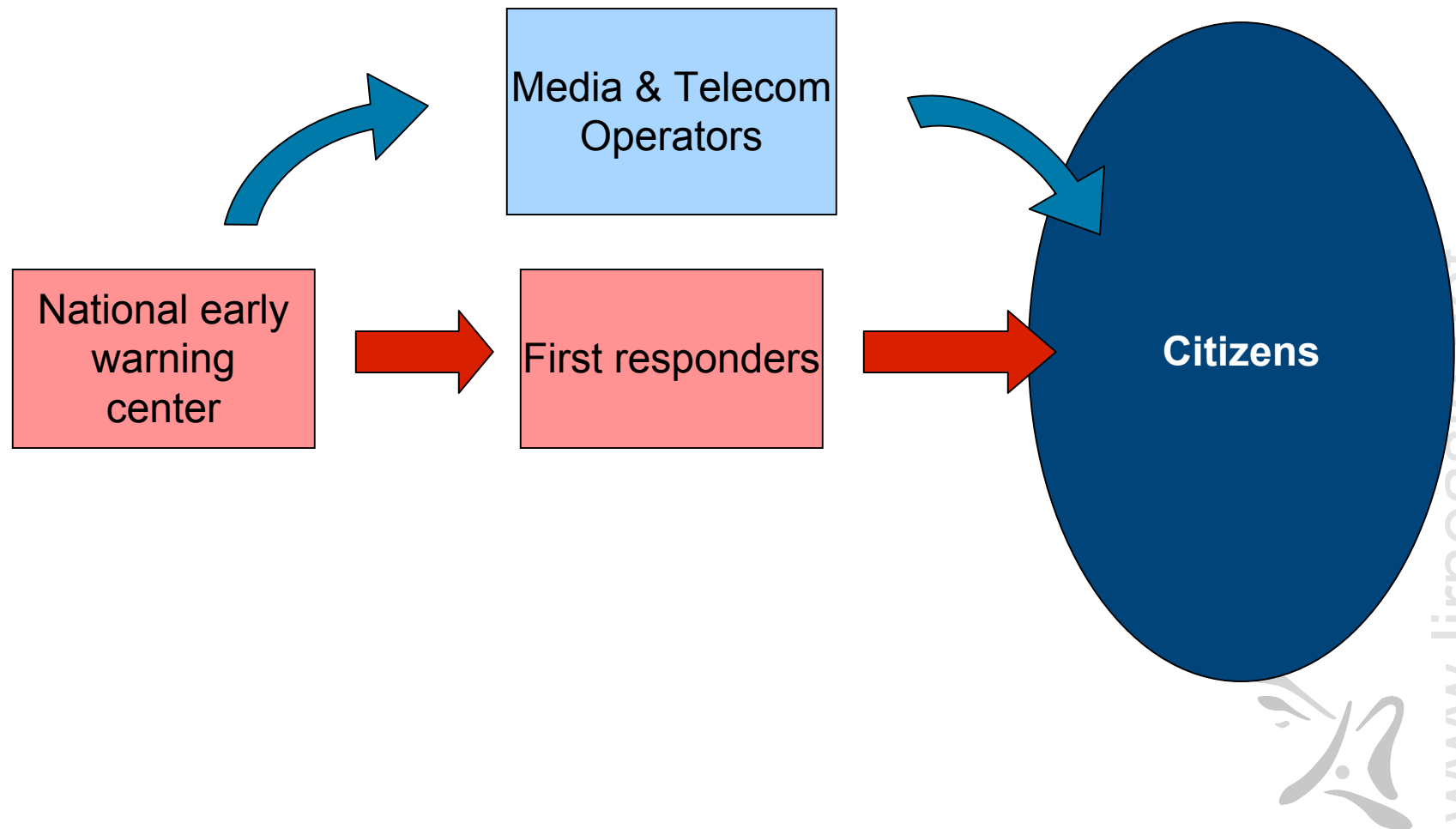


**More time to run; more lives saved**

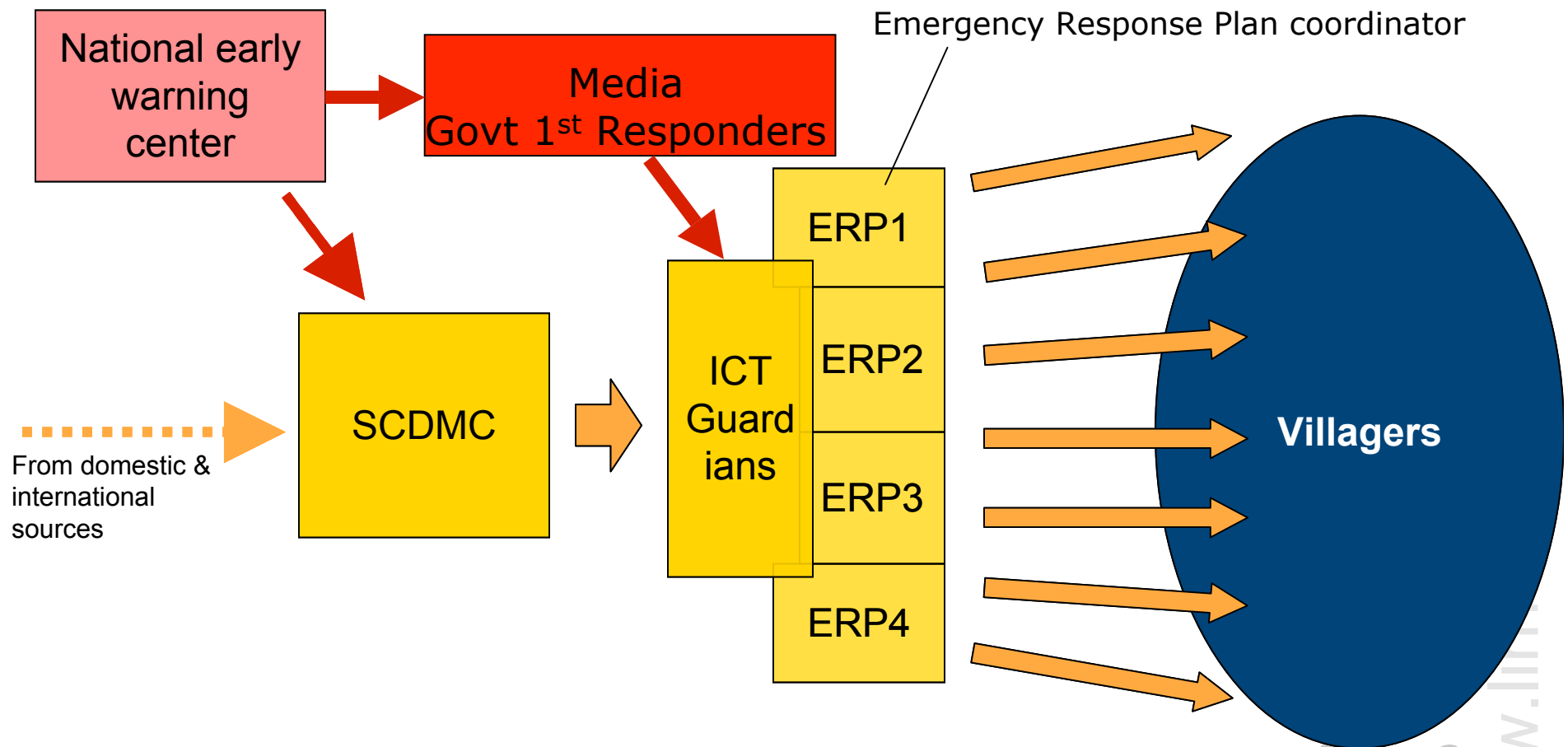


# Early warning chain (standard form)

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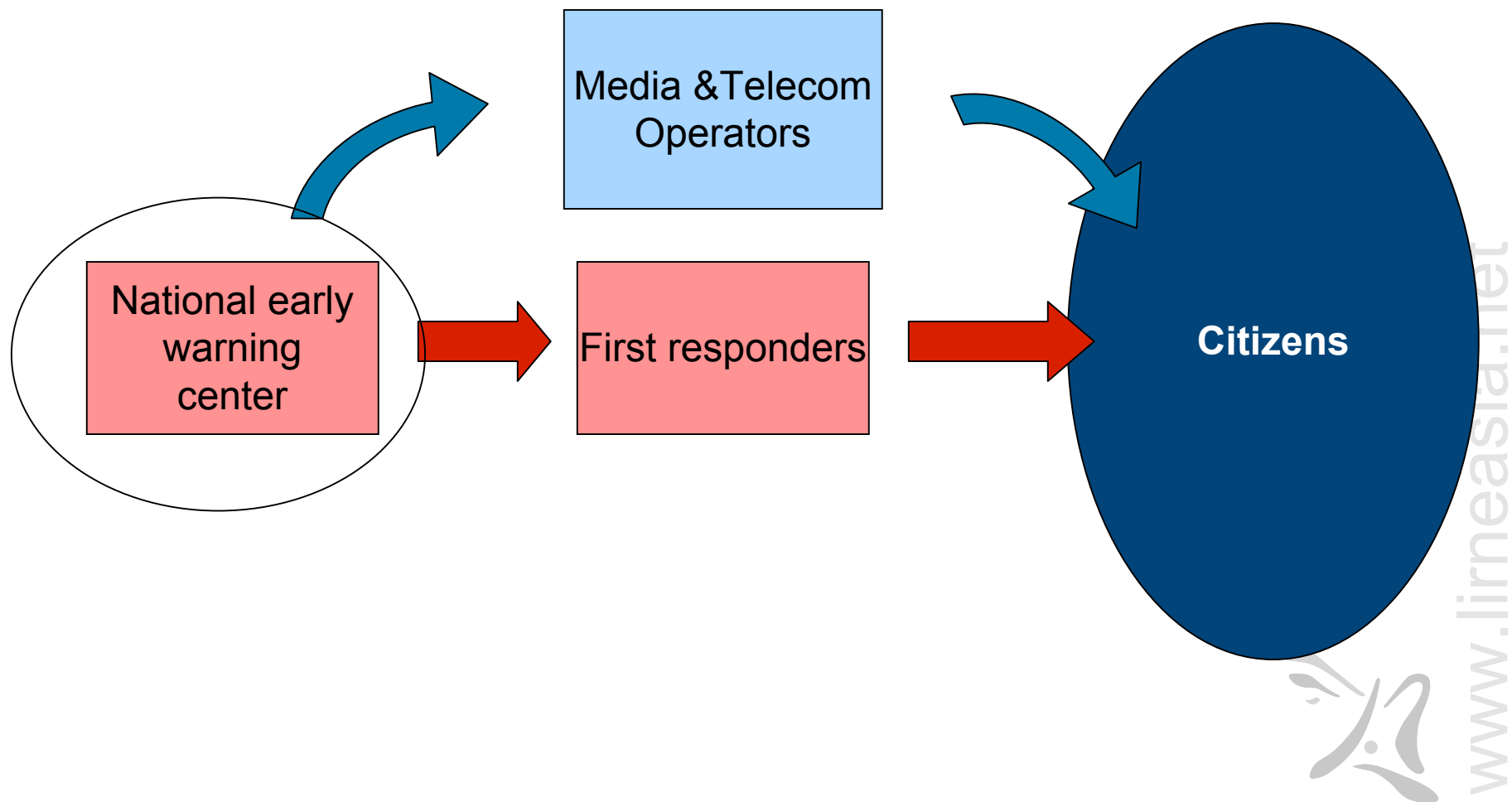


# Early warning chain (community based; applicable to Last-Mile HazInfo project)



SCDMC will **never** issue warnings; only alerts so that communities can be better prepared to receive the warning from government

# Lessons for better/faster issuance of warnings at national warning center





# Scale of the problem

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- Imagine sequentially dialing and giving the message to
  - Television channels (7 in Sri Lanka)
  - Radio channels (10+)
  - Telecom operators (8)
- If each call takes 3 minutes, need 75 minutes for the whole set (leaving aside government first responders)
  - 2004 Indian Ocean tsunami reached Komari/Arugam Bay coastline within 90 mts of earthquake
  - Detection-monitoring people require 15 mts minimum to issue a warning, so all we have in 75 mts
  - Faster we get the message out, more time for people to respond



# Efficient procedures can improve decision making and avoid bad outcomes

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- ❑ Getting the best possible information to national experts
- ❑ More time for experts to consider the options and advise authorities
- ❑ False warnings can cause
  - Deaths (more than 10 in Sri Lanka in the 2005 evacuation)
  - Robberies
  - People refusing to evacuate



# Pilot project results

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- ❑ Efficiency of receiving the outputs of hazard detection and monitoring system
- ❑ Procedures for authorization of message, if any
- ❑ Efficiency of transmitting message
  - Role of Common Alerting Protocol
  - Single-input multiple-output mechanism



# Elements of a solution re transmitting messages

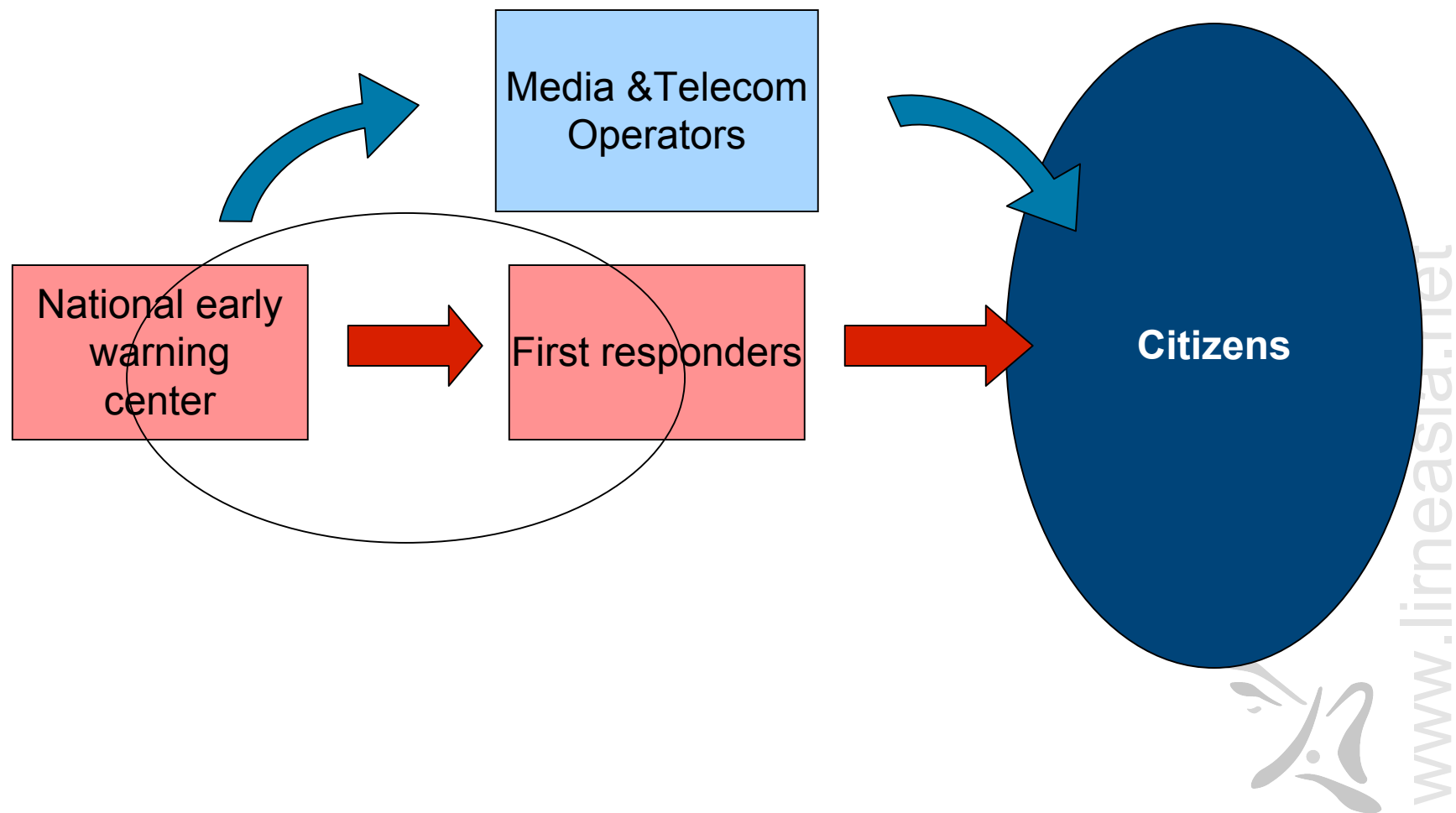
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- ❑ Filling in of standard template that includes automatic translation based on look up of dictionaries
- ❑ Single button transmission in multiple media and multiple languages
- ❑ Achievable in a few months
  - Need to develop internal protocols
  - CAP broker software
  - Equipment at media newsrooms and telco operations rooms
  - Procedures for verification that do not involve a one-on-one phone call



# Lessons for communication to first responders

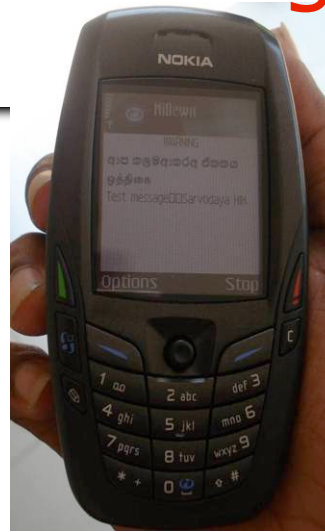
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# ICTs used in reaching communities



CDMA Fixed Phone



GSM Mobile Phone



Remote Alarm Device



Addressable Radios for Emergency Alerts



Very Small Aperture Terminals

# Which work best?

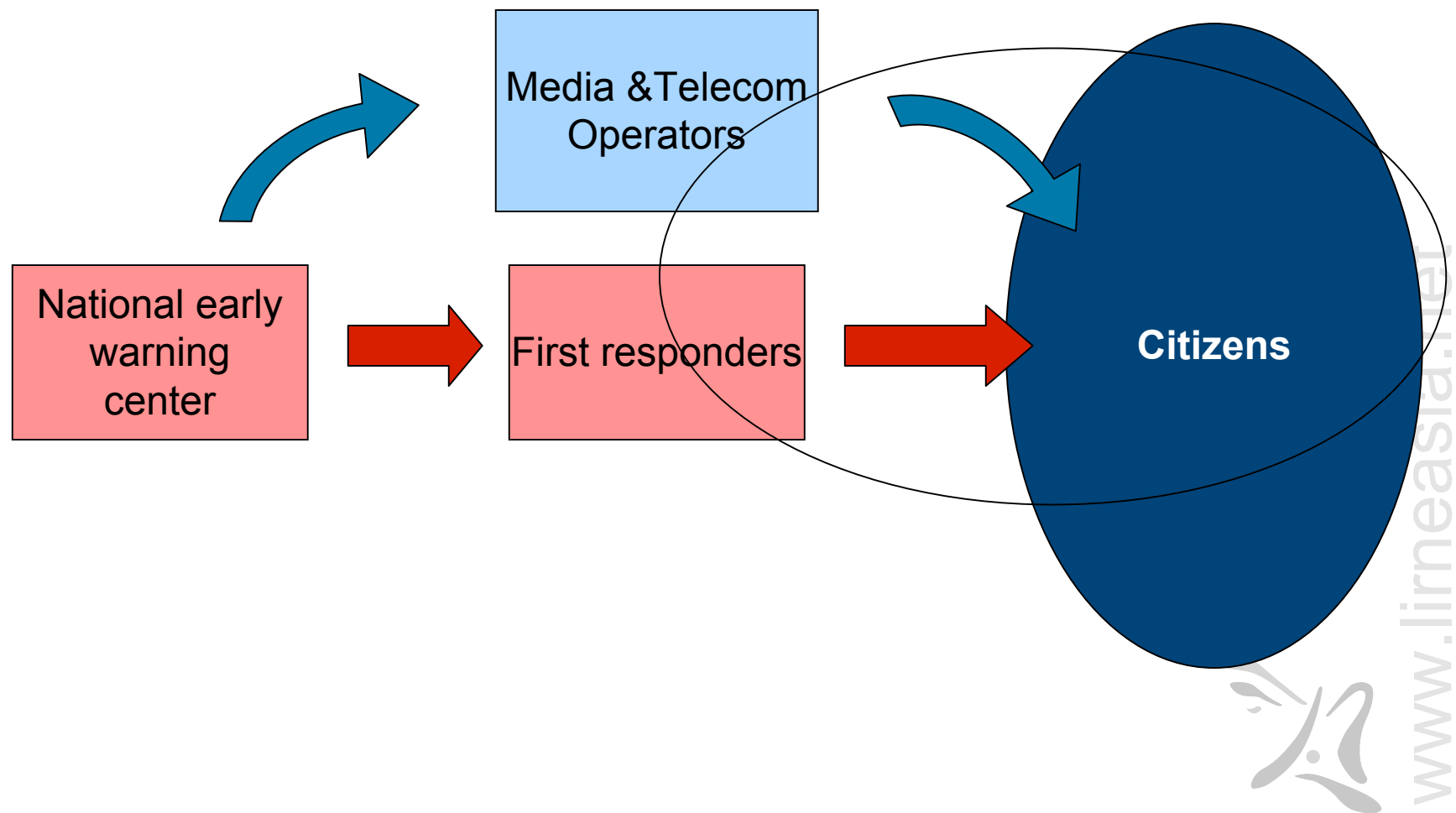
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- ❑ Eight modes (individual and combined)
- ❑ Reliability and effectiveness (composite measures)
- ❑ Complementary redundancy



# Lessons for the last mile

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# Community specific

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- ❑ Forms of training that will work
- ❑ Levels of organizational strength
- ❑ Importance of emergency response plans
  - Plan without simulation is no plan
  - Simulation without plan cannot be done





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## Telecom sector contributes to LK economic growth, while prices decline 5 edit

Published by [samarajiva](#) April 12th, 2007 in [General](#).

The Central Bank of Sri Lanka's **2006 Annual Report** states that: "The GDP deflator, which measures the price changes of all goods, produced in the economy, increased by 10.3 per cent in 2006 compared with the rate of 9.9 per cent in 2005. High price increases were recorded in most sub-sectors except in mining and telecommunications, where prices were lower compared with the previous year. Higher fuel and material costs together with the depreciation of the Sri Lankan rupee during the year led to the increase in prices of most finished goods and services."

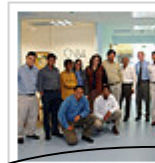
This is quite different from the spurious growth shown by government-owned enterprises driven by the higher rupee value of the output of the Petroleum Corporation which contributed to 90 per cent of the entire output of government-owned enterprises.

## LIRNEasia researcher invited to ITU meeting on disasters in Alexandria, Egypt 0 edit

Published by [samarajiva](#) April 12th, 2007 in [Disaster](#).

Nuwan Waidyanatha, the Project Manager of the Last-mile HazInfo Project, has been

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