Regulator's role in disaster risk reduction

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Learning Initiatives on Reforms for Network Economies

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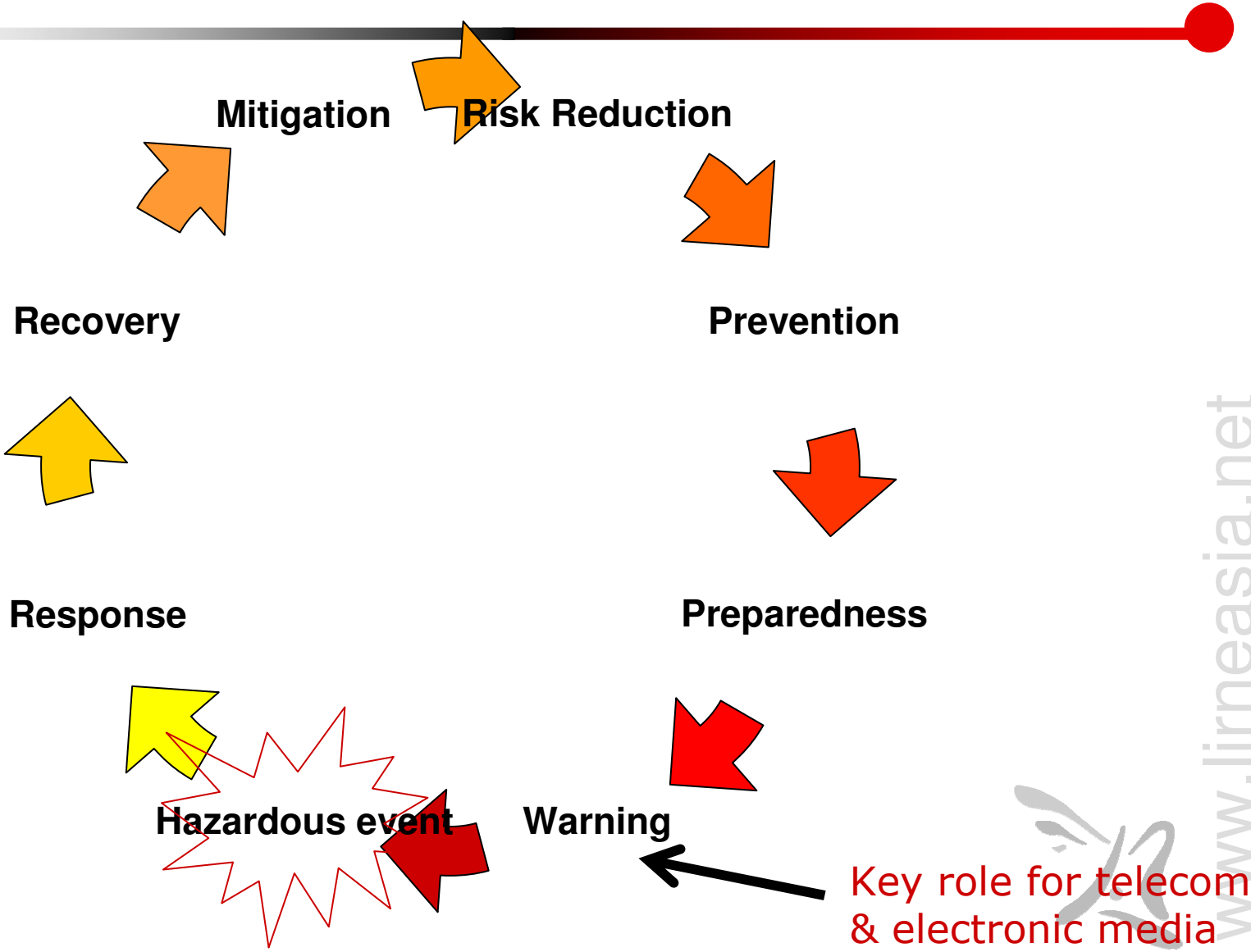
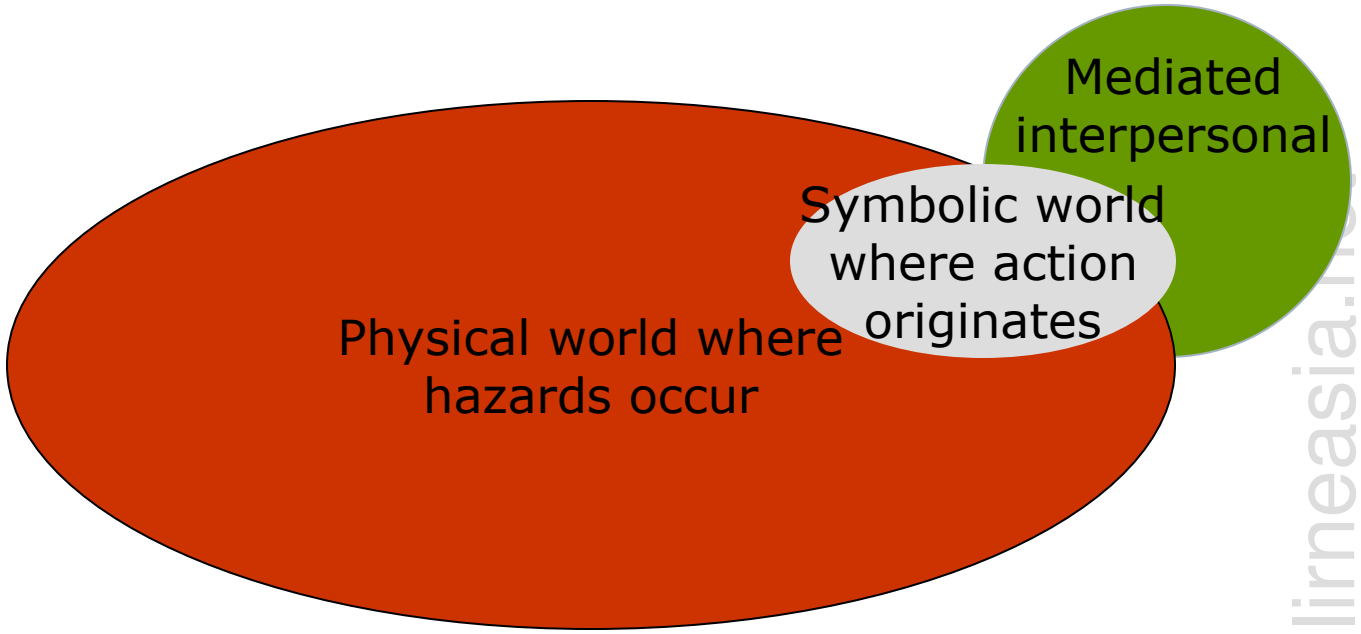
Agenda

- The disaster cycle and the role of ICTs in disaster risk reduction through warning
- Optimal applications of ICTs
  - SMS
  - Cell broadcasting
- Regulatory responses-pre disaster
- Regulatory responses-during disaster
- Regulatory responses-after disaster
- Tampere Convention

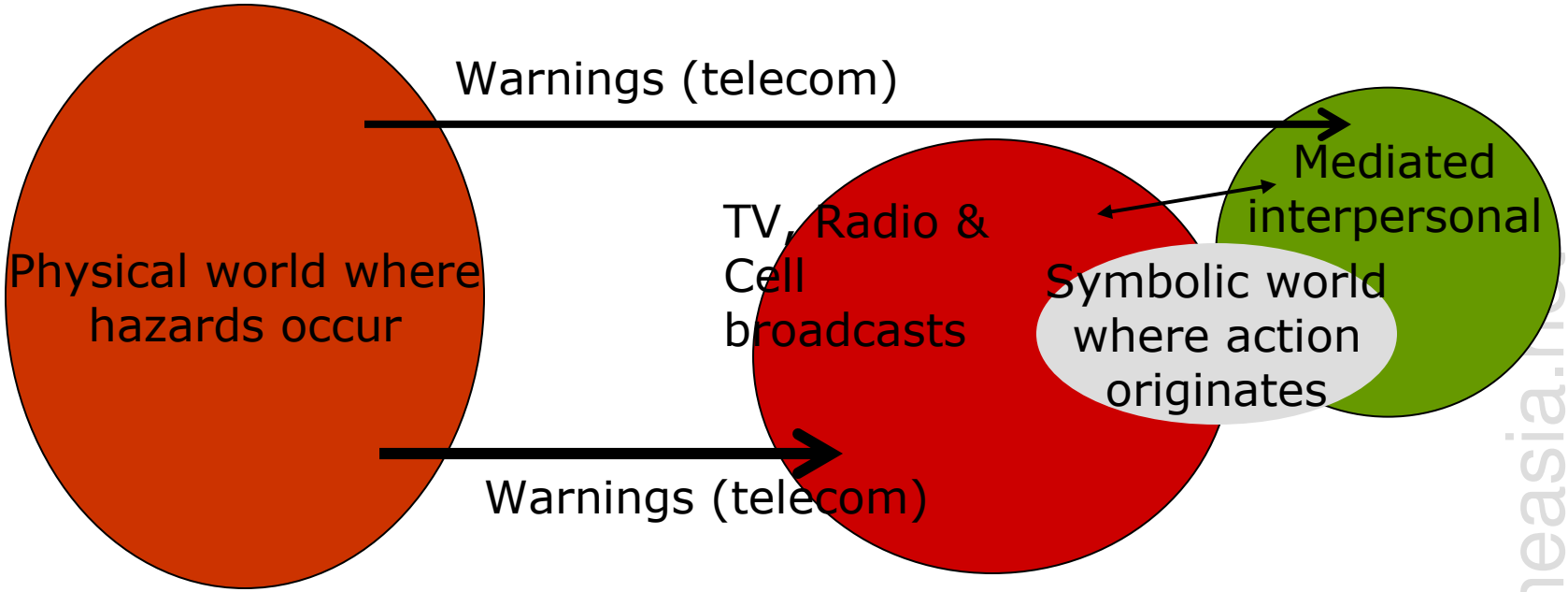
The disaster cycle



Physical and symbolic worlds, absent linking technologies



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



More time to run; more lives saved

Types of hazards

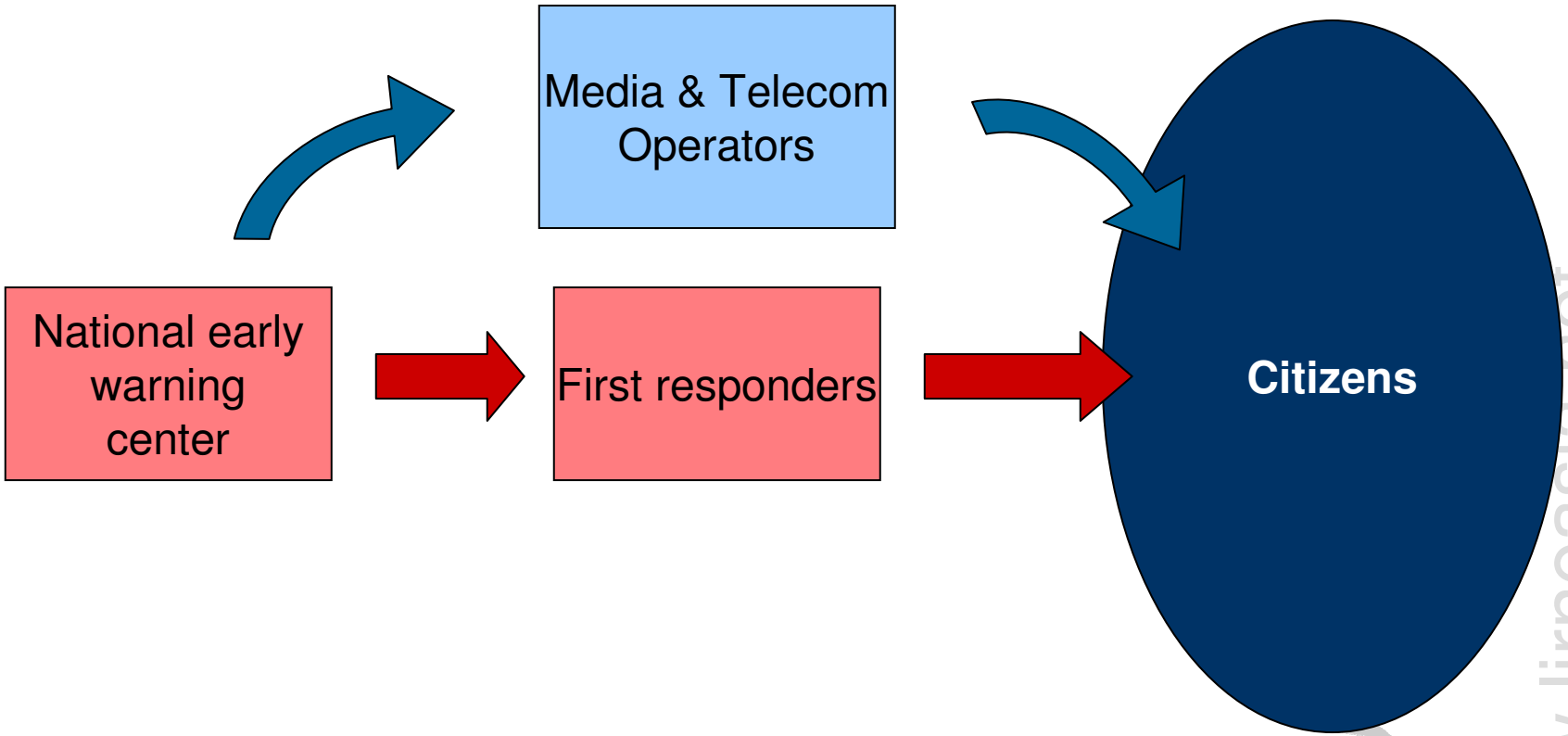
Optimum effect of ICTs

	Rapid onset (60 mts < t < 3 days)	Slow onset
Large geographical effect	Tsunamis, cyclones, dam breaks (cascaded), floods	Drought, climate change
Local geographical effect	Dam breaks (single), land slides	Erosion

Early warning is a chain; a chain is as strong as its weakest link

- Detection and monitoring of rapid-onset, large-scale hazards (cyclones, tsunamis, etc.) quite advanced
- National warning systems can be improved
- Getting the message to the people-at-risk ("last mile") is the weakest link
  - Failed in Burma (Myanmar); Bangladesh; Indonesia, etc., after 2004 tsunami
- Risk reduction also requires that people know what to do and can do it (e.g., orderly evacuations)
- False warnings and unnecessary evacuations can have serious consequences
  - High cyclone deaths in B'desh in 2007, caused by false tsunami evacuation of 12 September 2007

Early warning chain (standard form)



Two easy ways to strengthen the early warning chain

- Improve communication from National Early Warning Center (NEWC) to media and first responders using SMS plus
- Add cell broadcasting to public warning provided by electronic media

SMS+ for first responders & media

- SMS is a point-to-point technology that is inherently susceptible to congestion if too many people come on the network at the same time
  - Unsuited for public warning and in immediate aftermath of disaster
  - Useful to alert small numbers before the news is widespread
- SMS module of Sahana suite allows one-touch dissemination of 140-character message to pre-registered first responders and journalists
  - Additional information provided through a robust website capable of handling a spike of use

SMS+

- Immediately implementable solution that is part of widely implemented open-source disaster-management software suite, Sahana
- Principal advantage is that it reaches mobile handsets that are highly likely to be within immediate reach of intended recipients

Cell broadcasting for public warning

- As a broadcast mode (point-to-multipoint) CB is inherently immune to congestion
- No pre-registration required, reaches all handsets within a base station area
  - Can be targeted to specific areas, unlike national radio and TV
- Negative is that audible alert may not be possible on all handsets yet
- Ideal for countries like Thailand and Maldives with very high mobile penetration
  - Moderately useful for India, projected to have at least 50% of BOP households covered in 2008
  - Not applicable to unreformed countries like Burma

What regulators can do

- Reliable, redundant communication links needed for
  - Hazard detection & monitoring
  - Linking warning center to media and to first responders (police, etc.)
- May be covered under license conditions
  - Price, quality, availability
- Even if not, regulator can create platform for interaction between operators and disaster warning entities
- Efficient management of short codes

Regulatory roles

- Standards for disaster-resilient infrastructure, including load factors and tower locations
  - Best arrived at/implemented with operators
- Measures to avoid congestion and failure
  - Priority numbers
    - But problems; proceed with caution
  - Load shedding protocols

Regulatory response

- Requirements for quick response to disaster
  - Contact persons/numbers
  - Emergency kits
  - Mutual support arrangements
  - Interface between operators and government agencies
    - Regulatory agency to be 24/7 contactable
  - Tampere Convention on Provision of Telecom Resources for Disaster Mitigation & Relief Operations
    - National authority
      - Preparation of inventory can assist preparedness

Regulatory role at time of disaster

- "State of exception"
  - Procedures for approvals/licenses/ authorizations
  - Customs clearance of emergency equipment
- Survivors need to contact families/people need to locate loved ones
  - Prior arrangements re
    - Databases
    - BPO/Call centers

Regulatory role in recovery phase

- Post-disaster assessments
  - Requirements to preserve data
  - Bring operators together to improve procedures
- Who is to pay for damage?
  - If government pays, wrong incentives
    - If government does pay, use matching funds
  - Insurance requirements
  - Deal with the immediate problem but also ensure incentives for robust network planning are not affected

Regulatory role in recovery phase

- Restoring service
  - Temptation to fall back to command and control mindset
  - Regulator can balance the political needs of government with avoidance of administrative expropriation
    - Provide neutral ground to work out restoration schedule
  - If government wants to give people free service, it should pay for it
    - Corporate Social Responsibility is voluntary

Restoring lives and livelihoods

- Telecom is important; people recover through talk
  - Try to get more phones to affected areas than there were before the disaster
  - Encourage low-cost packages; installment payments
  - Educate people on economizing

Tampere Convention

- International treaty that came into force in January 2005 though with only a few signatories
- Intended to provide a legal framework for sharing telecom resources in disaster situations
  - No expropriation of emergency equipment
  - Limited immunity for personnel

Tampere Convention

- Requires member states to
  - Designate a national authority to coordinate with UN Emergency Relief Coordinator
  - Prepare a Telecom Assistance Information Inventory
    - Useful also as part of domestic preparedness planning

Why regulators should care about disaster management

- Part of reducing regulatory risk → creating a better telecom regulatory environment conducive to investment
- Regulator has unique knowledge and ability to bring parties together
- Will contribute to legitimacy

Good governance: the bulwark that saves lives

For further information . .

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