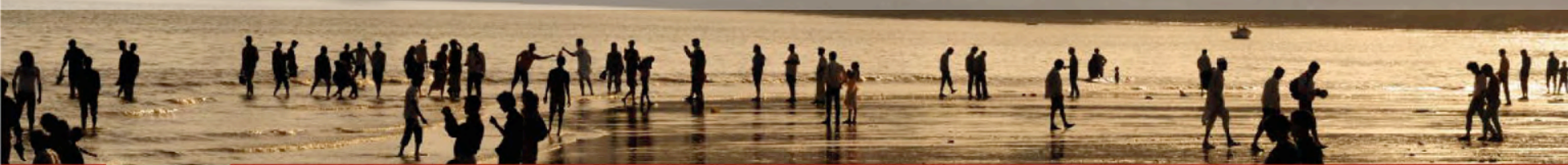


# Lessons from Integrated Coastal Multi-Hazard EWS in the Region: **Applications of Science, Procedures and Societal Resilience** **on the Ground**



**Presented by**  
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# Hazards in the Coastal Zone



## Episodic

- tsunami, earthquake, cyclone, storm surge, flooding, landslides

## Chronic

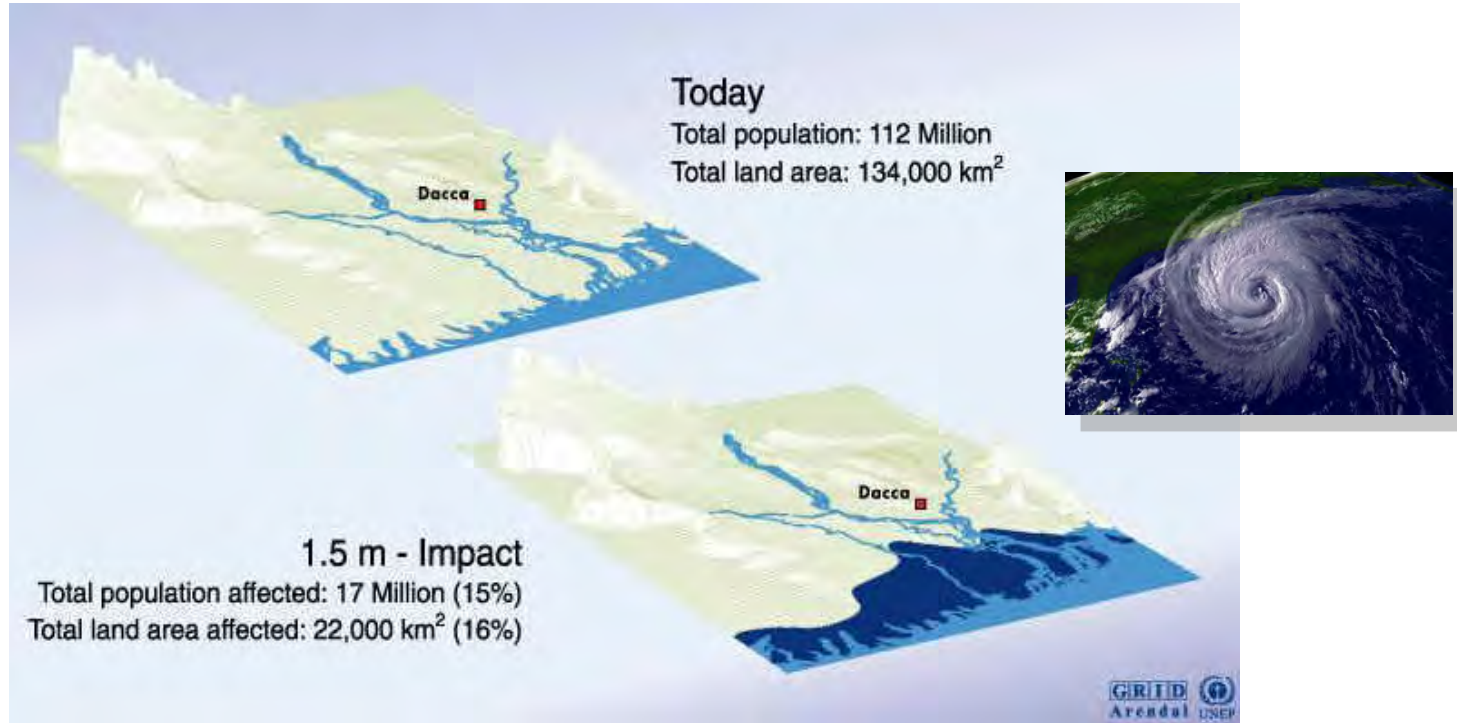
- shoreline erosion, sea level rise, seasonal flood, climate variability, coastal resource degradation, pollution



Coastal populations are dramatically increasing (leading towards demographic vulnerability)

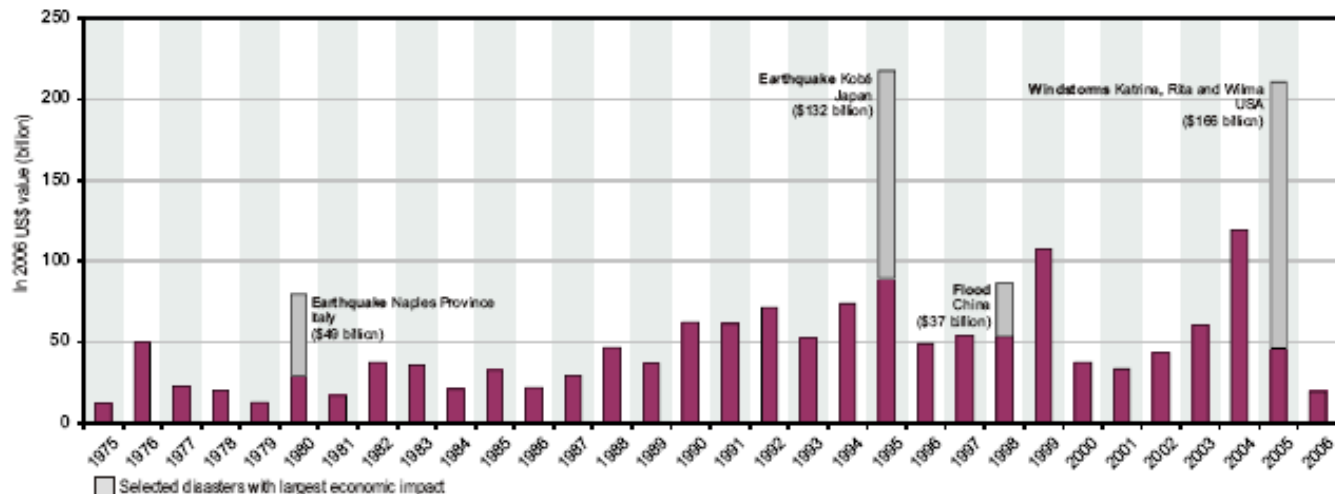


Climate change will decline the coastal hazard trends  
(e.g. sea level rise, floods, storm – both intensity & frequency)



Disasters are undermining years of development efforts

Annual reported economic damages from natural disasters: 1975-2006

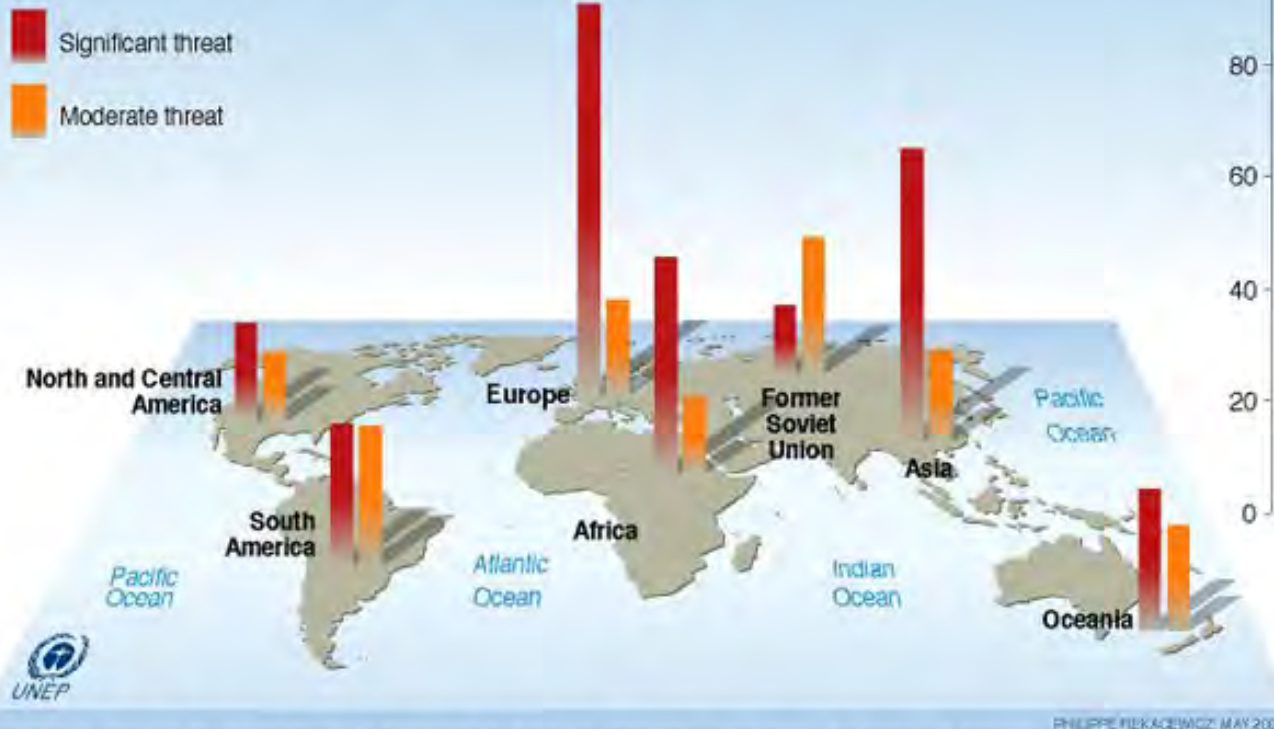




Increase in anthropogenic or human induced vulnerabilities are a clear pattern  
(transcending tolerable limits)

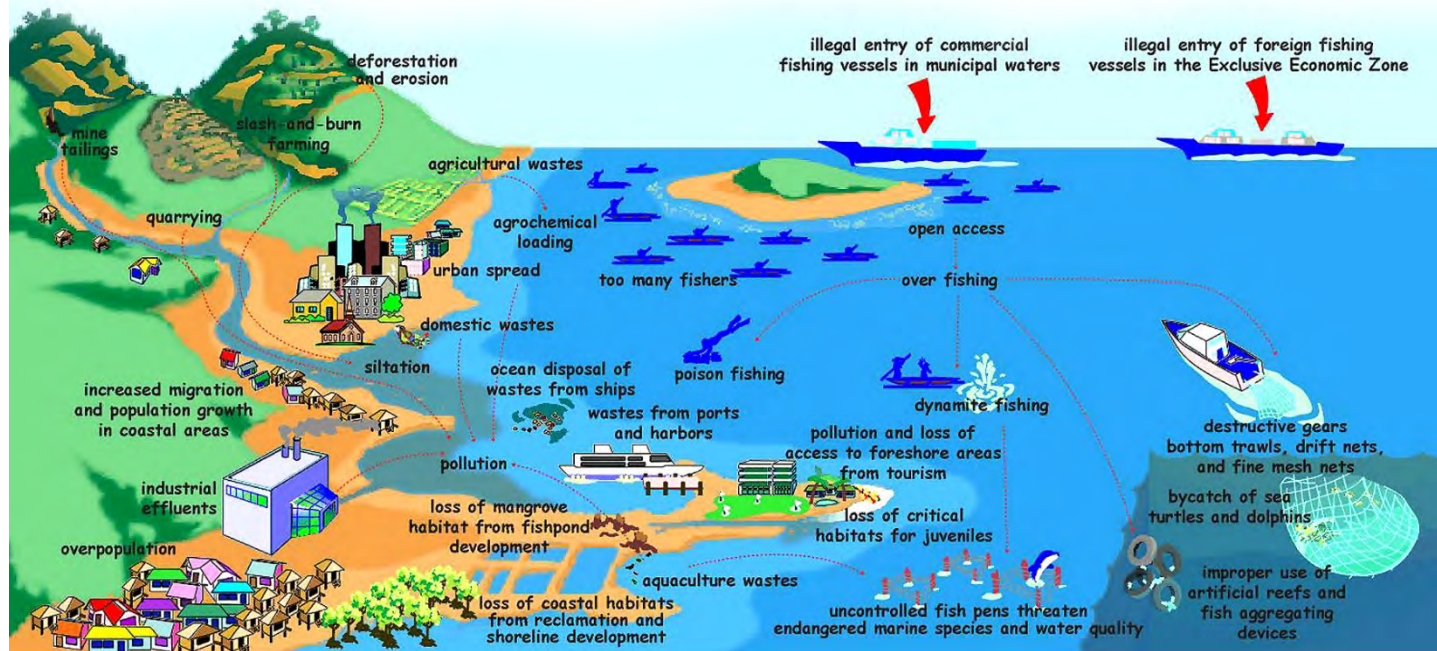


## Coastlines Under Threat



Source: D. Bryant, E. Rodenburg, T. Cox and D. Nielsen, *Coastlines at Risk: An Index of Potential Development-Related Threats to Coastal Ecosystems*, World Resources Institute, Washington DC, 1996.

# Mismanagement in coastal zones

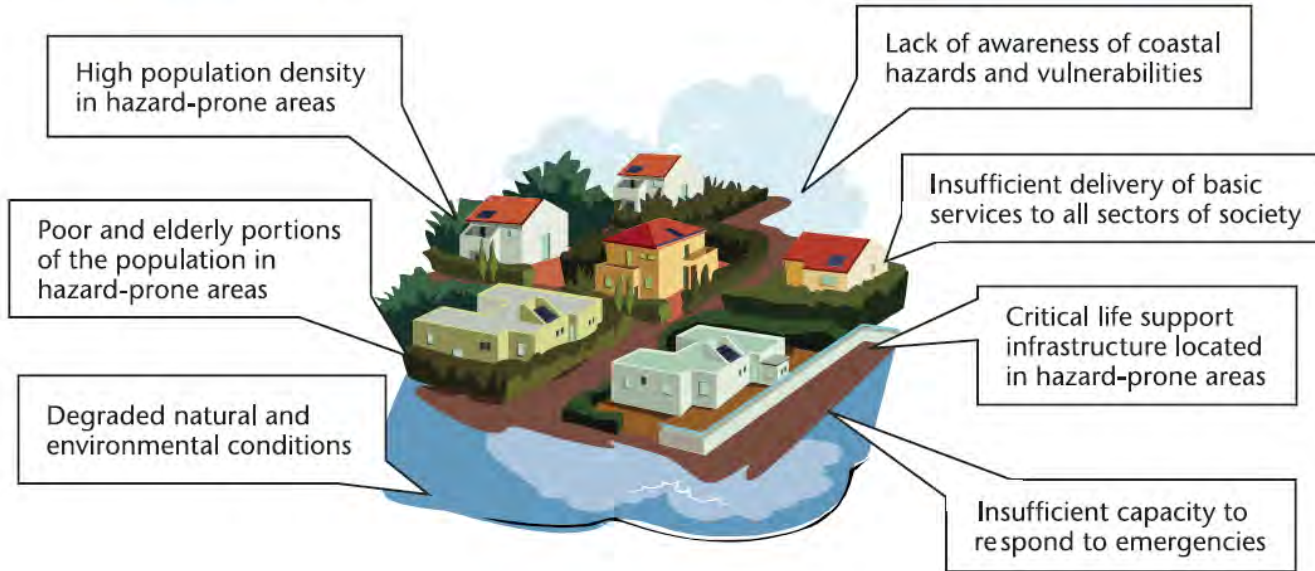


**Overexploitation**  
**Unplanned development**  
**Increasing pollution**  
**Resource use conflicts**  
**Weak institutional arrangement for governance**  
**Non linkage with DRR**



***Increased exposure to hazard risk***

***Limited capacity to address hazard risk***



Coastal natural “systems” are dismantling

Communities are becoming more vulnerable

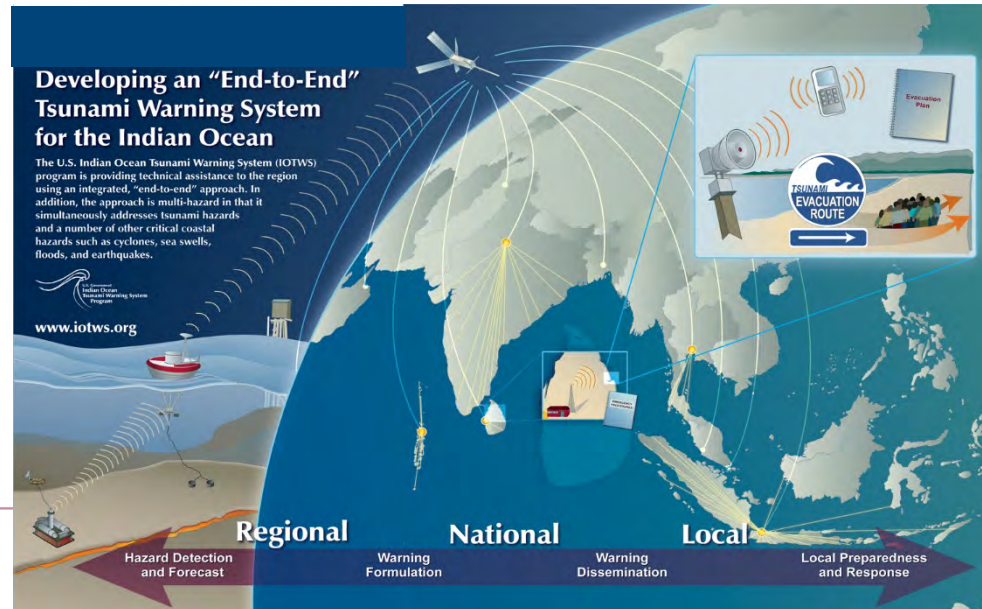
People are becoming more and more prone to  
“new surprises”

# An increased focus on “Community Resilience”

Mainstream  
DM Groups

The *Hyogo Framework for Actions (HFA)* -2005-2015 has increased the focus on building community resilience for disaster management

Early Warning  
System  
Group



# **Few experience driven lessons learned**



## Lesson area 1:

- **Collaboration with the International/Regional and National agencies for building training and capacities is critical for science based skills and technology sharing**
  - Weather Research and Forecast (WRF) for meteorological services professionals
  - Storm Surge Regional Training with JMA
  - Sea Level Rise Scenarios
  - Forecast Visualization tools
  - Many others
- **However, great need was found for conducting national level hands-on in country training**



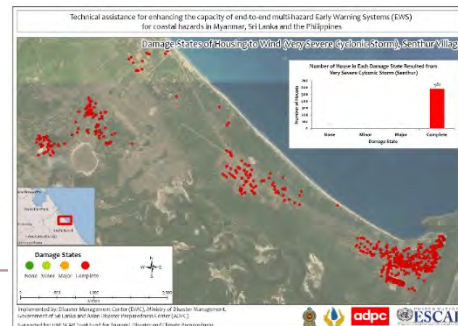
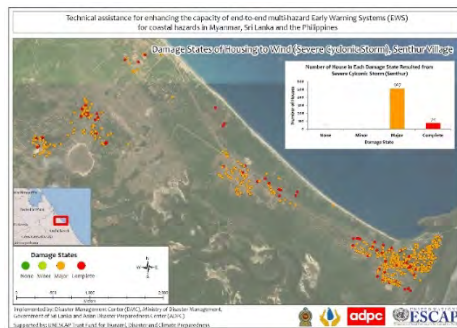
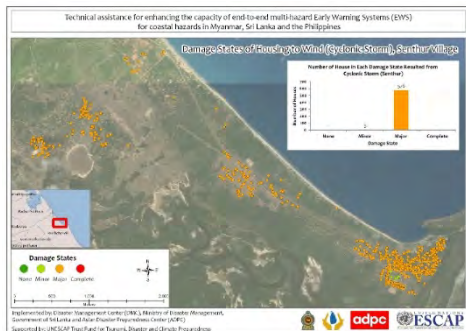


In country hands-on trainings to follow up transfer of knowledge is needed



## Lesson area 2:

- **Risk Assessment and mapping** should be linked to the early warning systems and needs to be used in EWS evacuation and planning
- **Various threshold based Risk Maps** are needed for Cyclone (e.g. by wind speed) for the local communities;
- This is a gradual process and needs future collaborative work and replication





### Lessons area 3:

- **Dedicated EWS communications needs to be ensured**
- **VHF Radio communications for EWS at community level can be expanded upto community levels connecting from the national EOCs;**
- **Public Addressing systems for local communities are essential**
- **Innovative collaboration needs to be established with 24X7 units/agents**

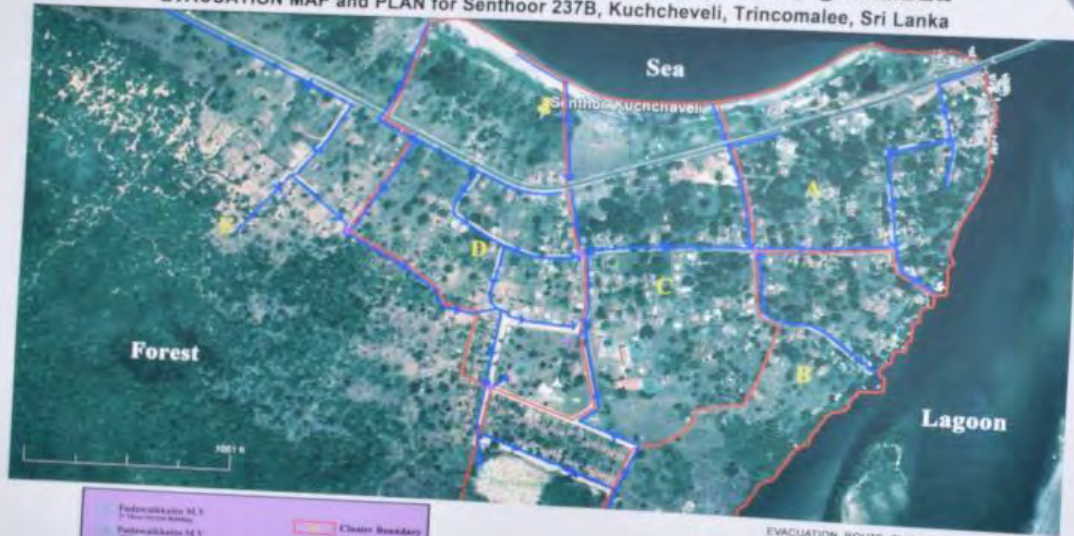




- **Development of Tools for Local level and Demonstration of End-to-End Community Early Warning”** was found very useful for various reasons:
  - Communication tools
  - Evacuation mapping
  - Setting up SOPs for evacuations
  - Motivating the groups: VDMCs, Youth Volunteer Units, Fisheries Cooperatives and respective DMC district units etc.;
  - Inclusive participation
  - Awareness and education



கட்டிட திட்டம் தயார் செய்து கொடுக்கப்பட்டது - கென்டர் 237B இலிருந்து விலகி  
 கிராமிய அனர்த்த அச்சு வலையுறுகை வரைபடம் - செந்தூர் 237B திருகோணமலை  
 EVACUATION MAP and PLAN for Senthoor 237B, Kuchcheveli, Trincomalee, Sri Lanka



EVACUATION ROUTE PLAN

Cluster	I	II	III	IV	V
A	✓				
B		✓			
C			✓		
D	✓				
E				✓	✓



Prepared by:  
 DMC, Trincomalee, Trincomalee, Trincomalee and Trincomalee.

"Technical assistance for enhancing the capacity of  
 disaster and health sector working systems (DHS) in  
 coastal districts in Trincomalee, Sri Lanka and Philippines."



- Community level simulations and evacuations drills are essential for community participation and routine checking









- Pilot level CBEWS activities are in demand and now needs replication and propagation strategy





- Guidance on **Community Early Warning Dissemination and Response and Procedures** help immensely

Professional  
level hands-on  
activities are in  
high demand  
for DM  
Managers and  
coordinators as  
well



## Lessons area 4:

- The “**Media and Awareness for DM Professionals as well as Media correspondents** are needed;
- **Simplified/ Synergized Standard Operating Procedures (SOPs)** are needed involving DRM and sectoral agencies and media;
- The experiences of ‘**Project Steering Group**’ and formulation of future ‘**Coastal Resilience Forum**’ are great lessons learned
- **Social media** is an encouraging mode but needs standardization



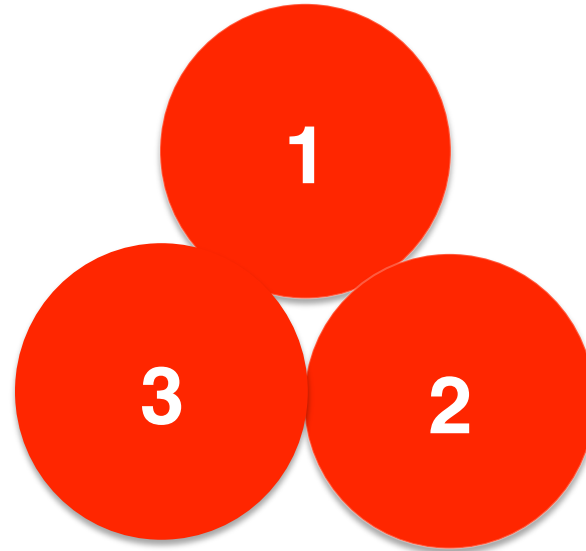


## Lessons area 6:

- Development of **cooperative mechanisms** at various layers supported by follow up plans and implementation arrangements for coastal hazard EWS is a requirement.
- These would take the initiatives and piloting beyond and make a **propagation** of efforts for sustainable continuation and **replication**
- National and sub-national **Forums** could play encouraging role at the ground.



**SCIENCE**

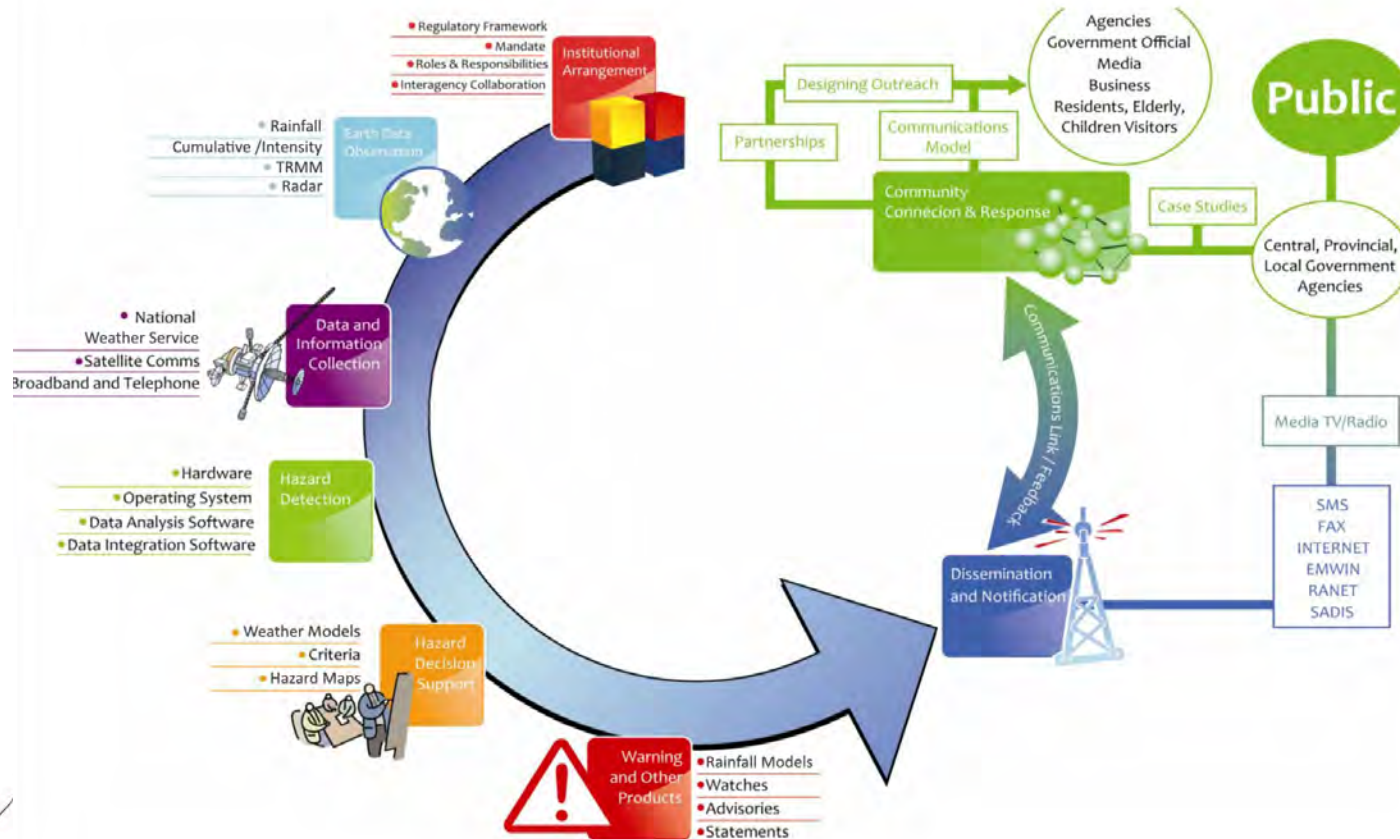


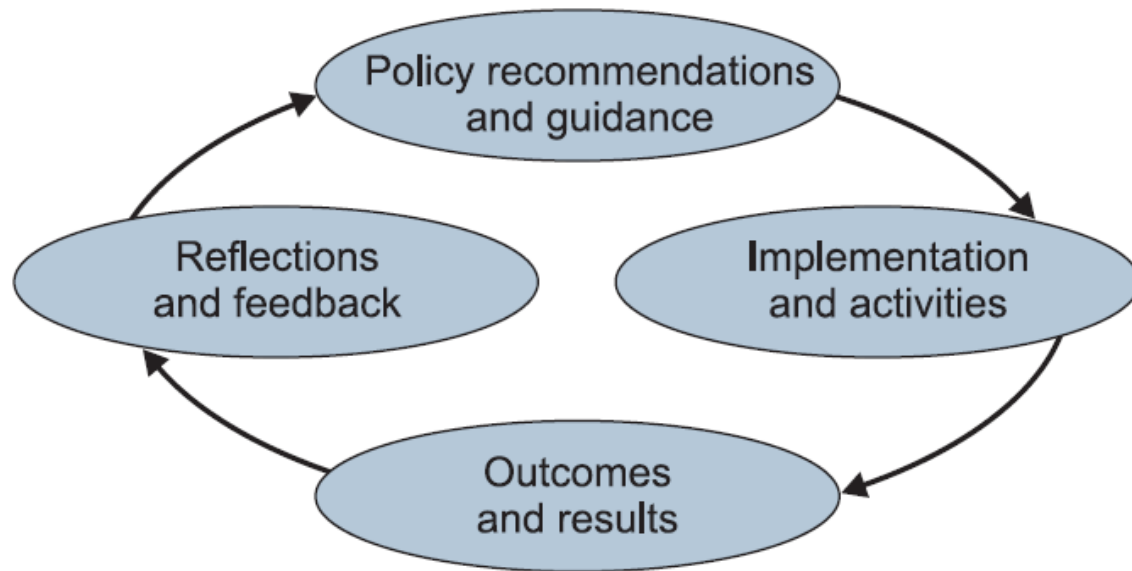
**PROCEDURAL  
Systems**

**APPLICATIONS**

## Lessons area 7:

## Gap Assessment and Analysis: look into the key elements of EWS

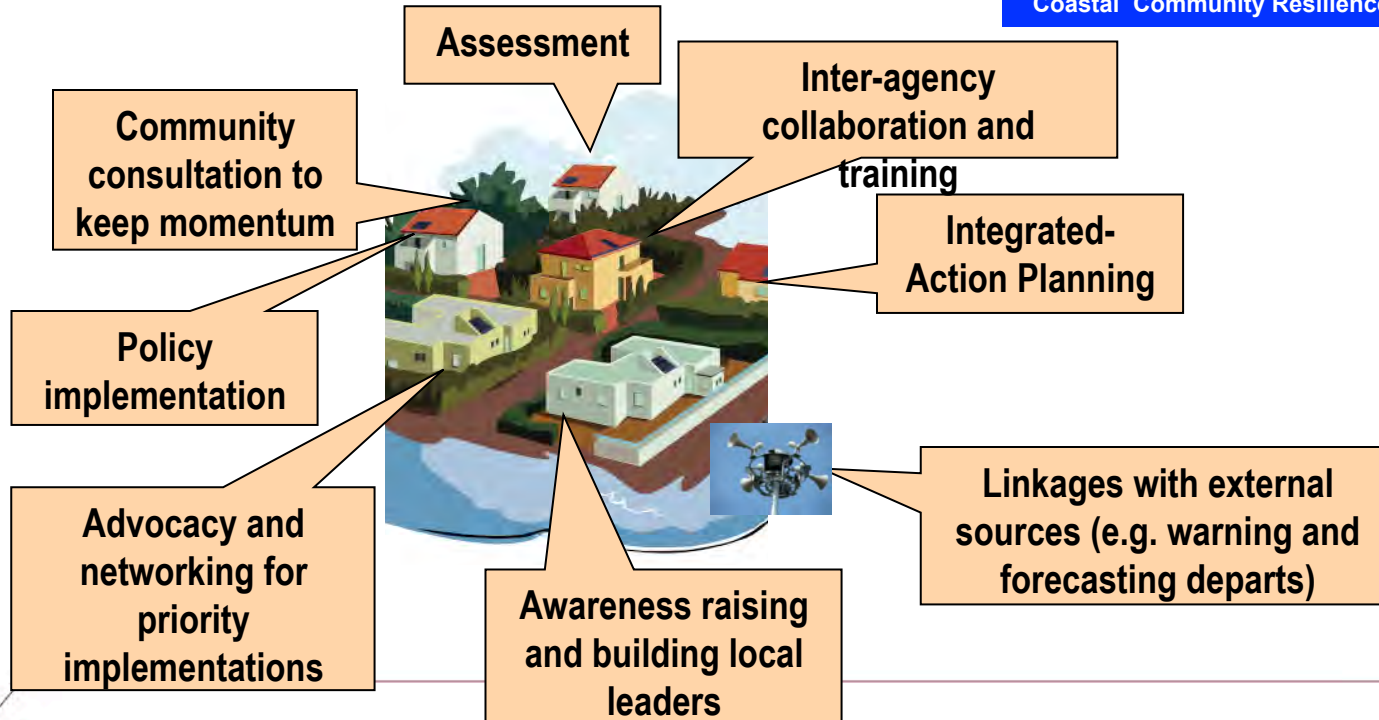




# Community readiness



## Coastal Community Resilience





## Facets of caring cooperation for E2E coastal Hazard EWS is needed :

- Collaborative skill development
- Demonstrative engagements
- Institutional integration/strengthening
- Extending collaborations
- Strengthening the gaps





**Thanks !**