

THE ROBERT S. STRAUSS CENTER™

FOR INTERNATIONAL SECURITY AND LAW



COMPLEX EMERGENCIES  
AND POLITICAL STABILITY  
IN ASIA

## **Applications of EM-DAT**

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[ccaps.developmentgateway.org/buildingthemodel](http://ccaps.developmentgateway.org/buildingthemodel)

[cepsa.developmentgateway.org/buildingthemodel](http://cepsa.developmentgateway.org/buildingthemodel)

# CCAPS and CEPISA

- *Two U.S. Department of Defense-funded projects under its Minerva Initiative*
  - *Climate Change and African Political Stability (CCAPS)*
  - *Complex Emergencies and Political Stability in Asia (CEPSA)*
- *Examining intersection of climate change and security in Africa and 11 countries in Asia*

# Climate Security Vulnerability

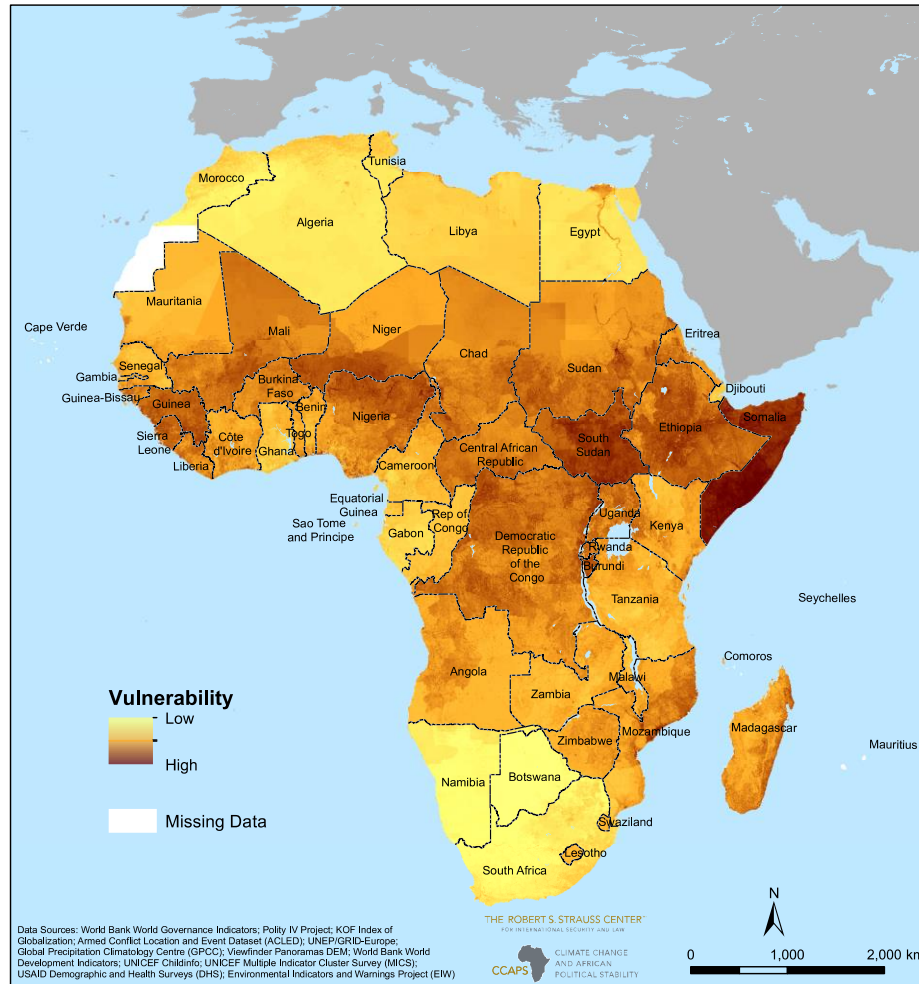
*- The risk in a particular location that large numbers of people could die from either direct exposure to a natural hazard or the follow-on consequences of dislocation and instability that the hazard might generate.*

# Composite Index

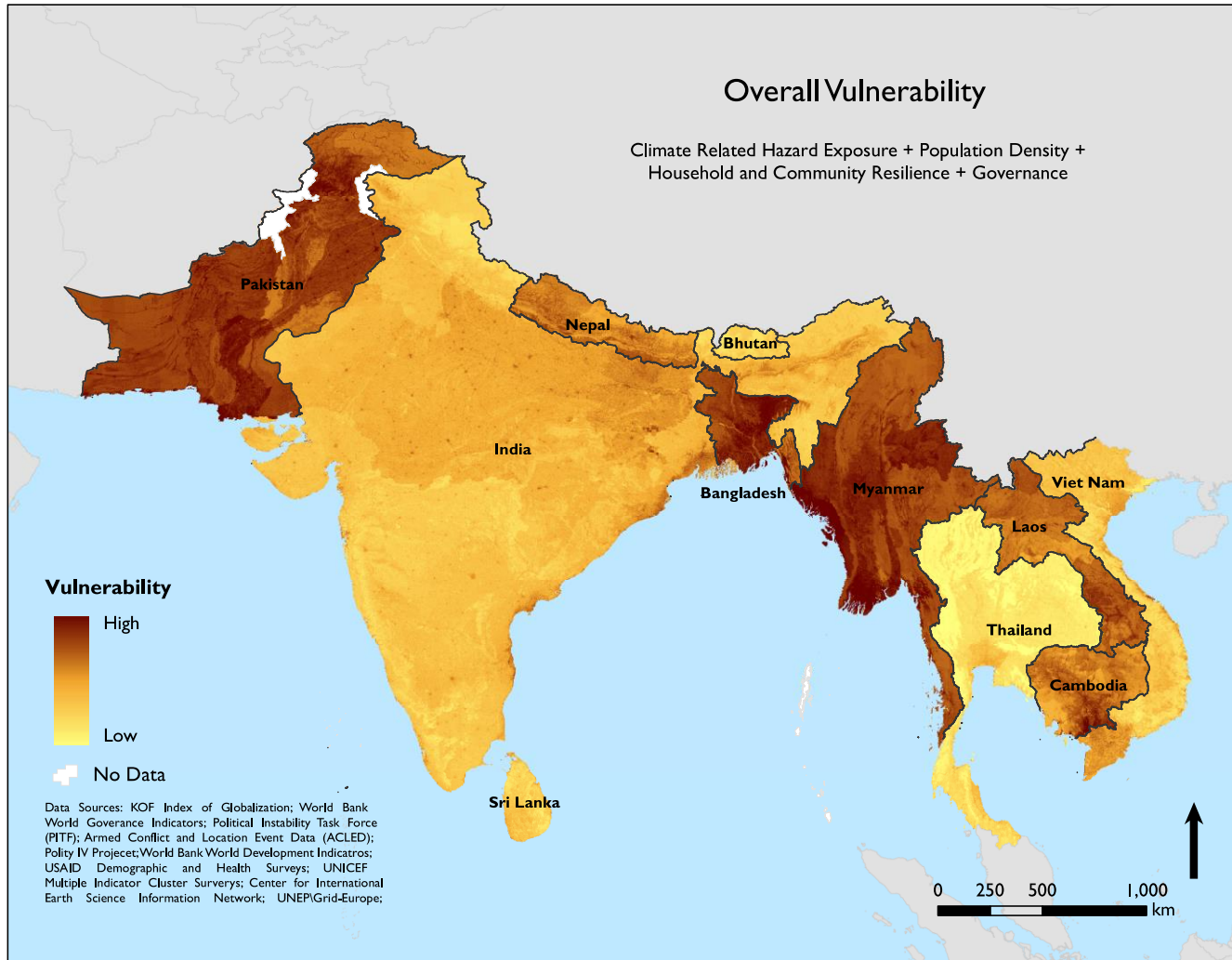
- Physical exposure, population, household/community resilience, governance
- Chronic vulnerability
- Hotspots
- Snapshots
- Relative vulnerability



# Composite Vulnerability - Africa



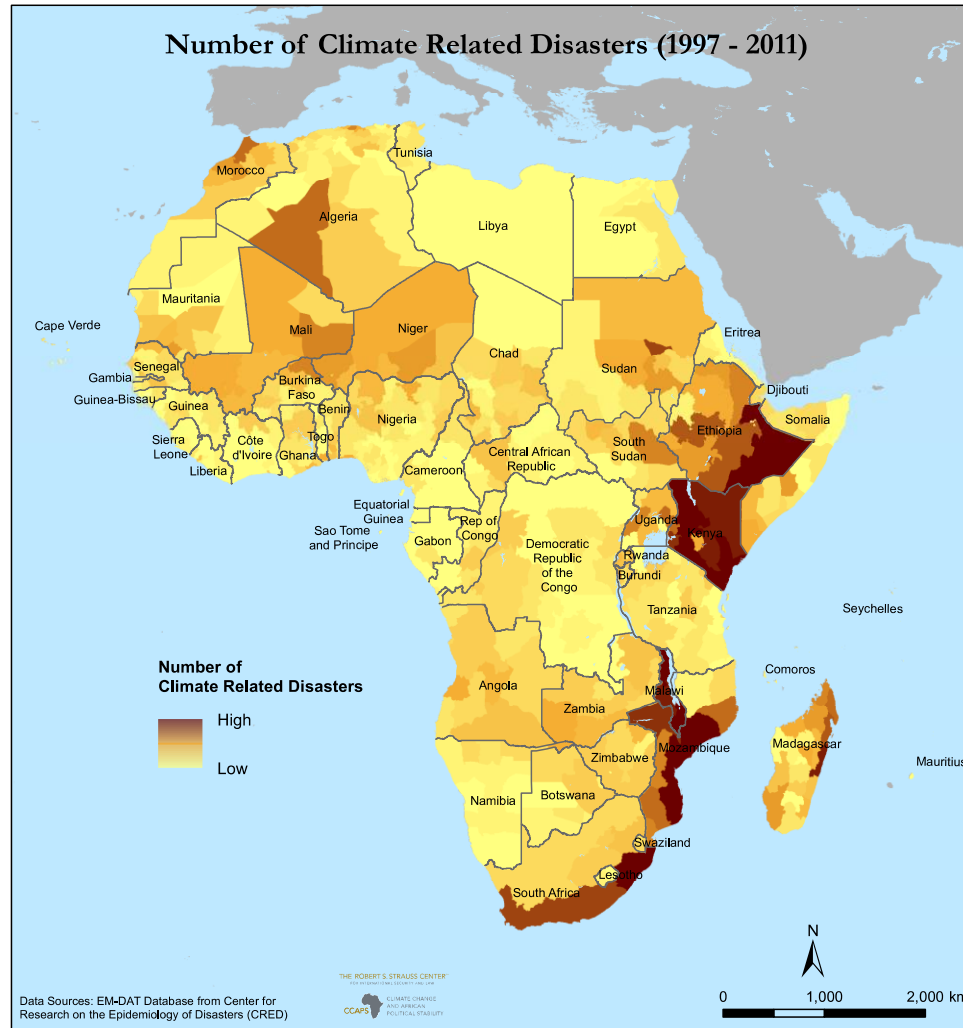
# Composite Vulnerability - Asia



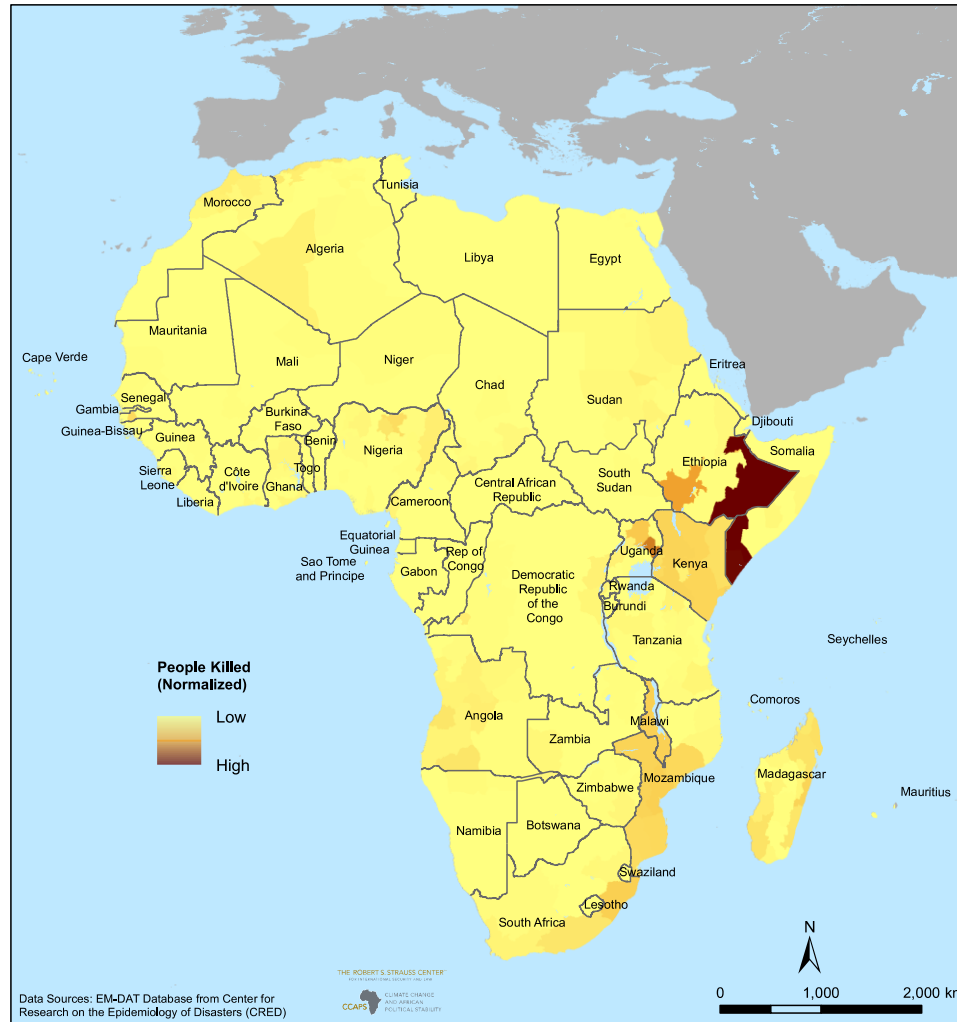
# Use of EM-DAT

- Use EM-DAT to externally validate model results
- Geo-coded EM-DAT climate-related disasters to the admin 1 level with geographic information
- Drought, flood, storms, wet landslides, wildfires, and extreme temperatures
- Apportioned death and affected counts in two ways
  - Equal proportions (150 people affected, 3 provinces, 50 each)
  - Population-based distributions (150 people affected, 50% of people live in province A, 25% in B and C, 50% of deaths to province A)

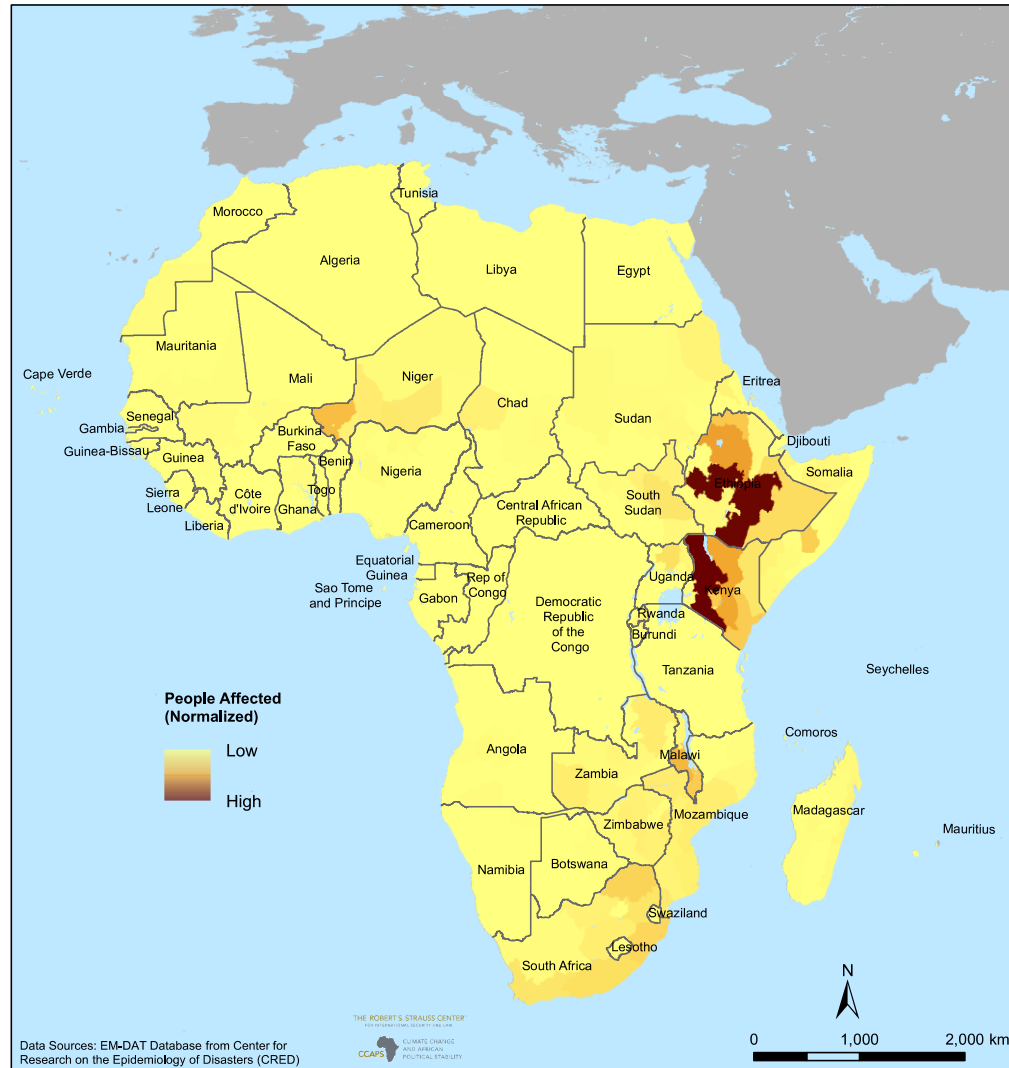
# External Validation – EM-DAT Events



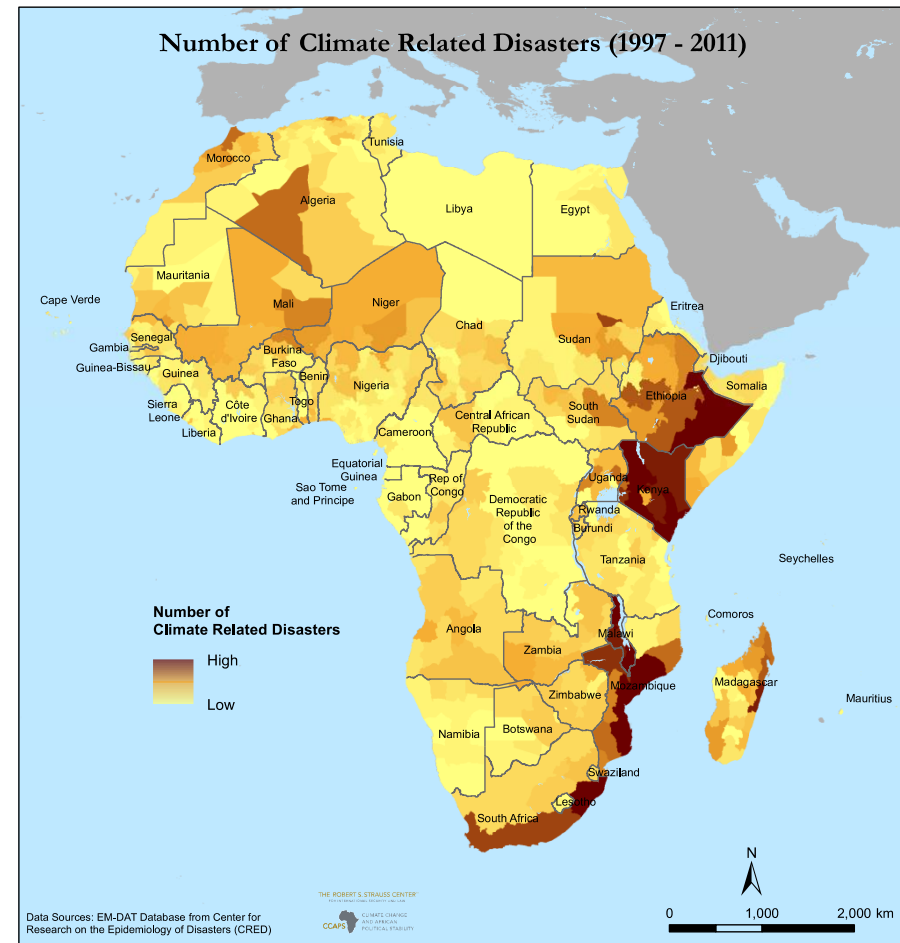
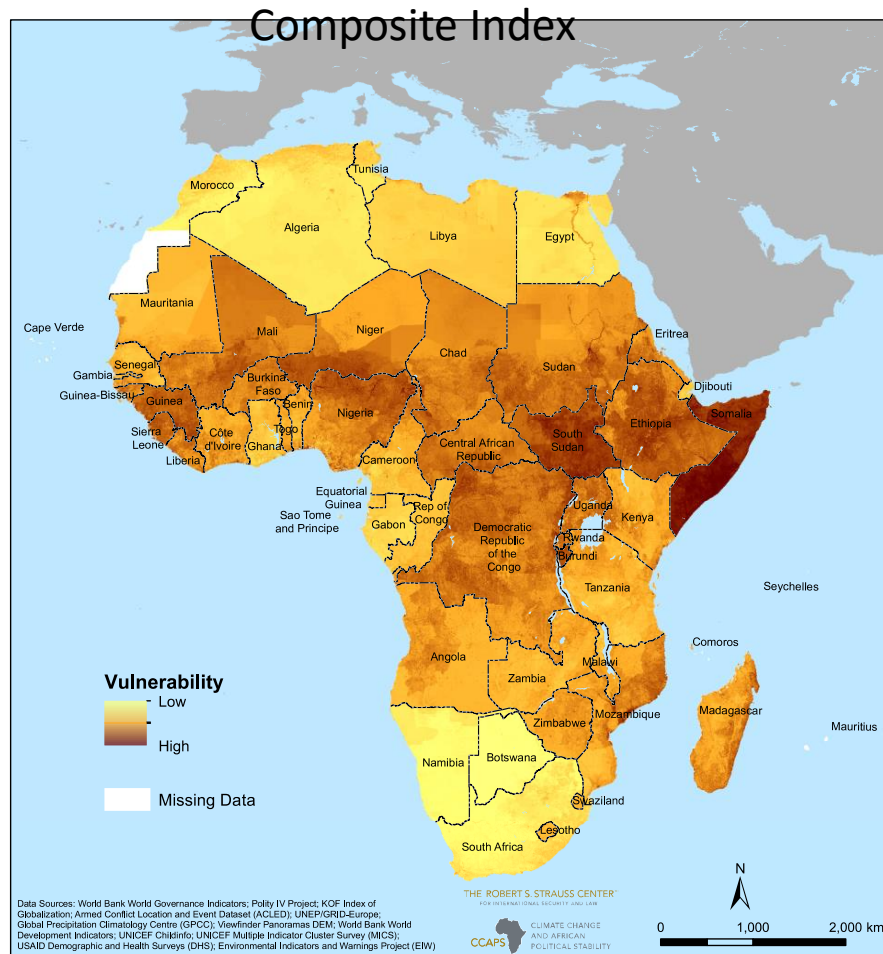
# External Validation – EM-DAT Deaths



# External Validation – EM-DAT Affected

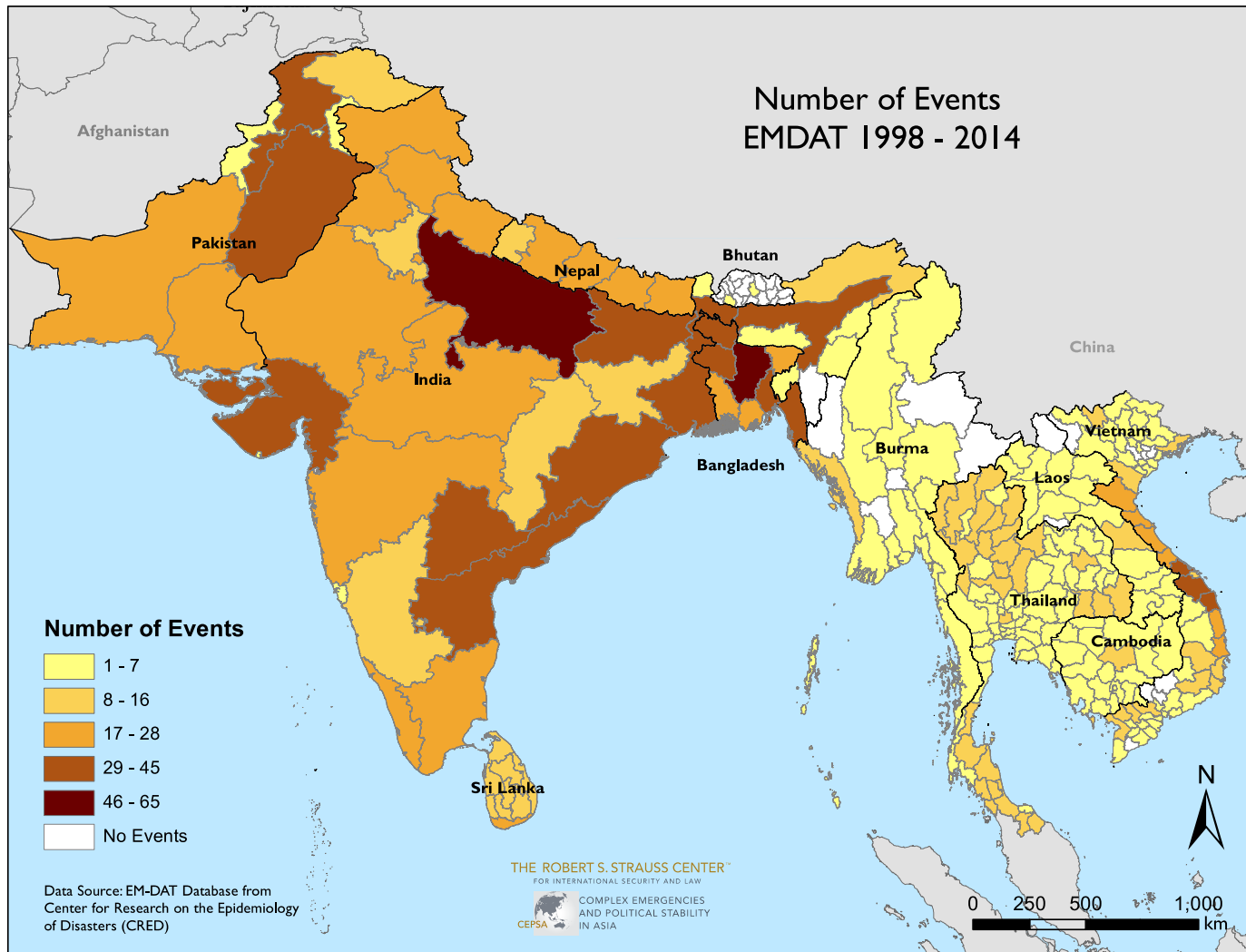


# External Validation – EM-DAT Affected



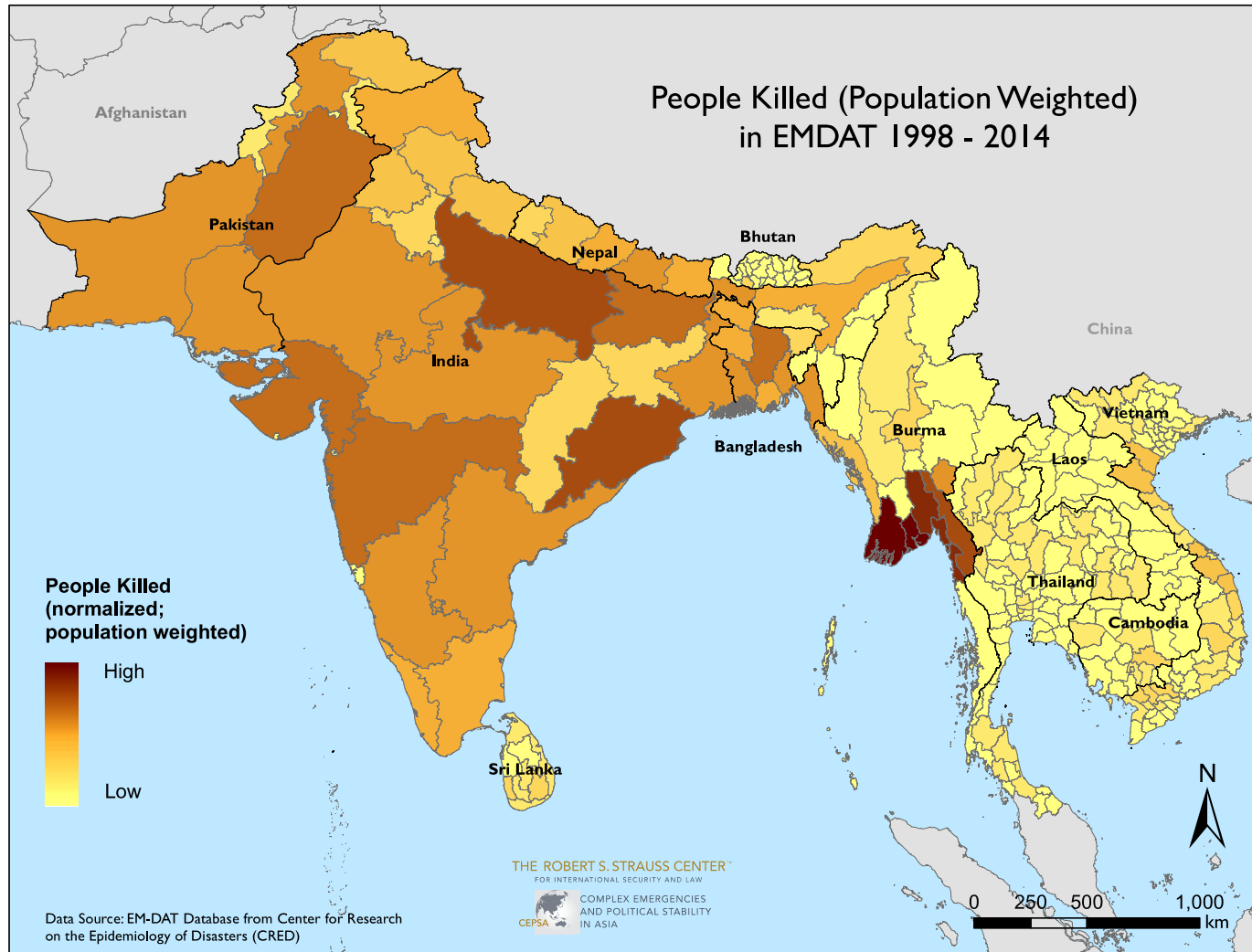


# External Validation – EM-DAT Events

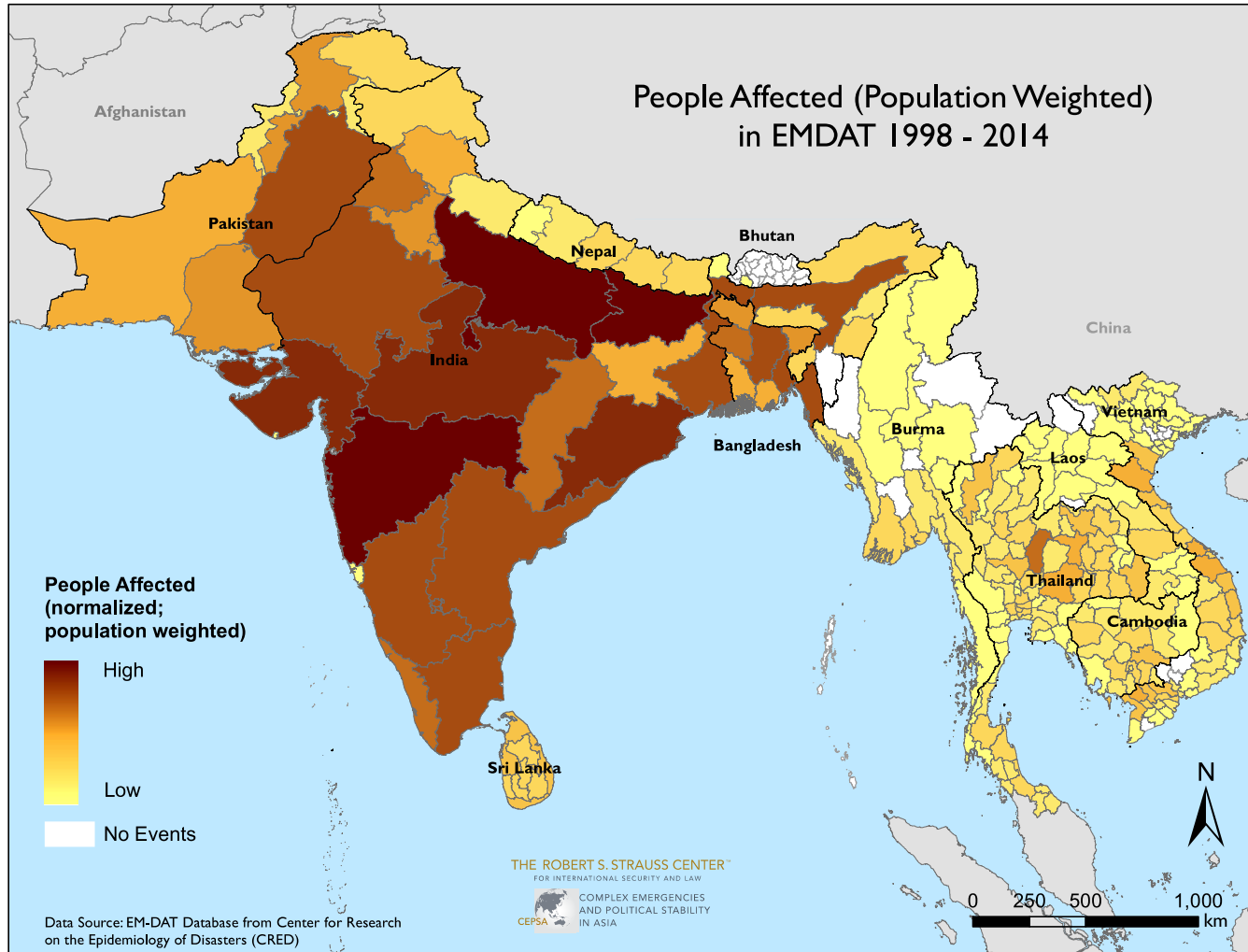




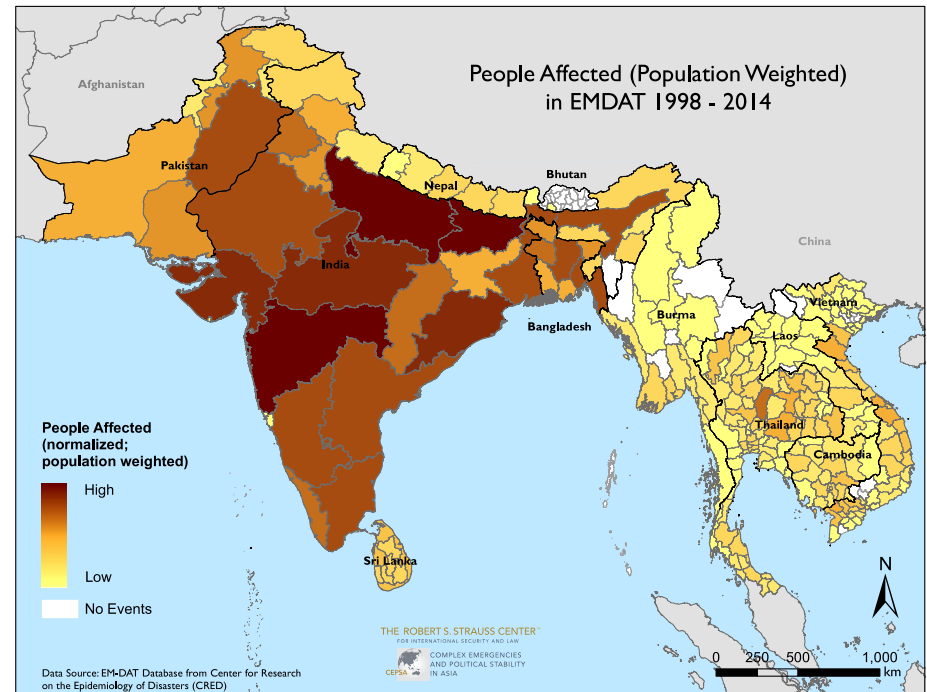
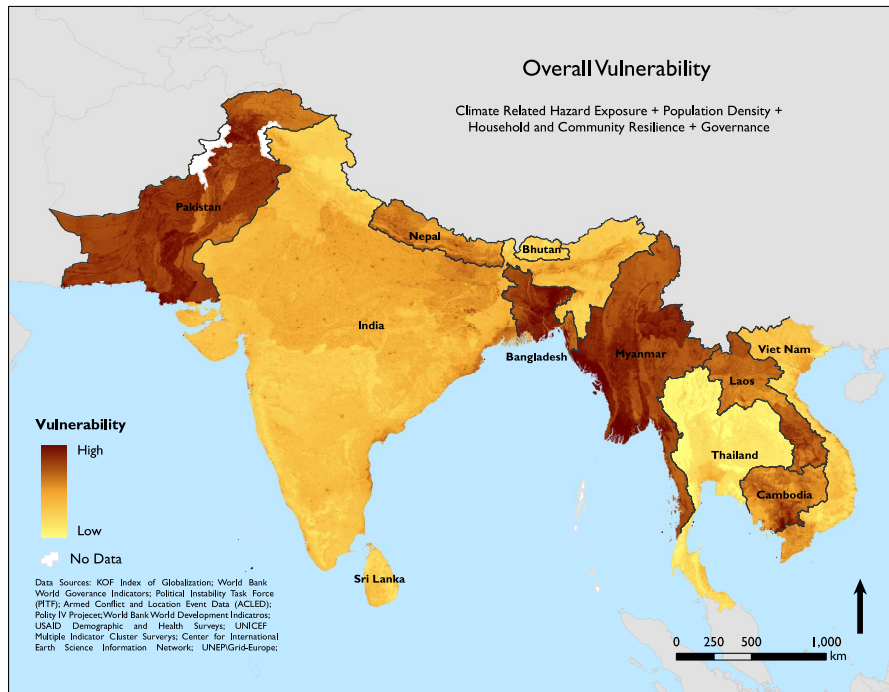
# External Validation – EM-DAT Deaths



# External Validation – EM-DAT Affected



# External Validation – EM-DAT Affected



# Accounting for Differences

- EM-DAT potentially has better event reporting in states with free presses (India, South Africa, Kenya)
- Insufficient geographic information in EM-DAT to use for this purpose
- Choices of model indicators, functional form fail to capture underlying reality

# EM-DAT Refinements

- Geo-code physical movement of specific disasters (cyclone tracks, extent of specific floods, etc. )
- Try to apportion casualty counts to geographic sub-units
- Streamlined process of procuring MOUs

# THANK YOU

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# Physical Exposure

- Cyclones
- Floods
- Wildfires
- Water anomalies
  - Negative rainfall deviations
  - Chronic water scarcity
- Low elevation coastal zones