UNGEGN | United Nations Group of Experts on Geographical Names

esri | THE SCIENCE OF WHERE

Addressing Data Challenges:

Responding to Emergencies and Disasters

Enhancing Global Resilience through Collaboration and Innovation

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International Strategies
Esri

Discussion Points

- Overview of GIS and the Geographic Approach
- Importance of the Geographic Approach in Responding to Emergencies and Disasters
- Data Challenges
- Call to Action
- Recommendations for Promoting Standardization

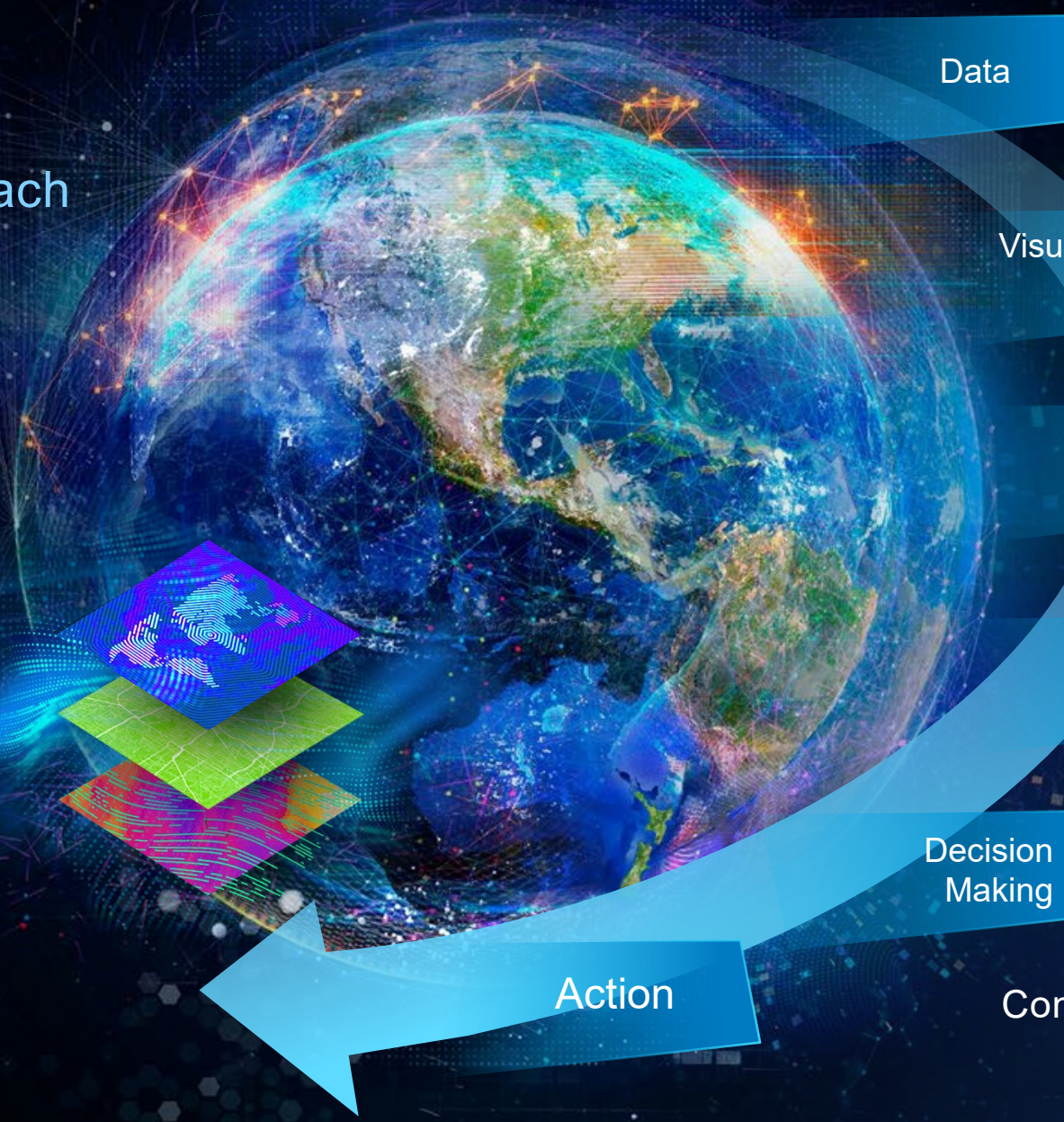
Addressing Emergencies and Disasters
Requires We Consider All the Factors

GIS

Enables The Geographic Approach

Providing a Process and Framework . . .

. . . For Applying Geographic Knowledge Widely



Measuring

Data

Assessing

Visualization & Mapping

Predicting

Analysis & Modeling

Understanding

Planning & GeoDesign

Applying

Decision Making

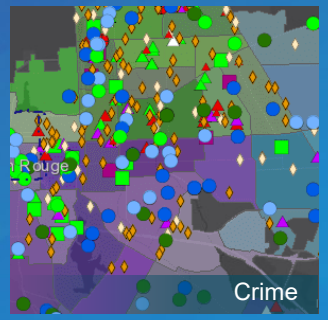
Communicating

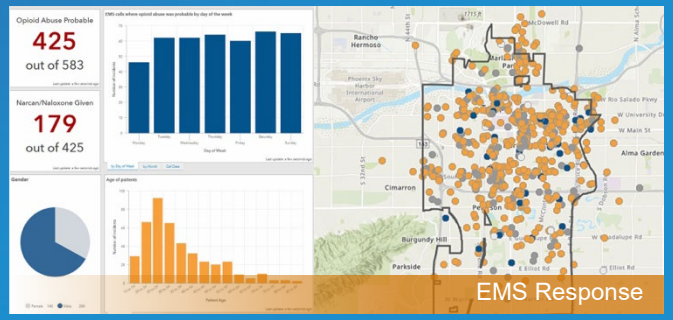
Action

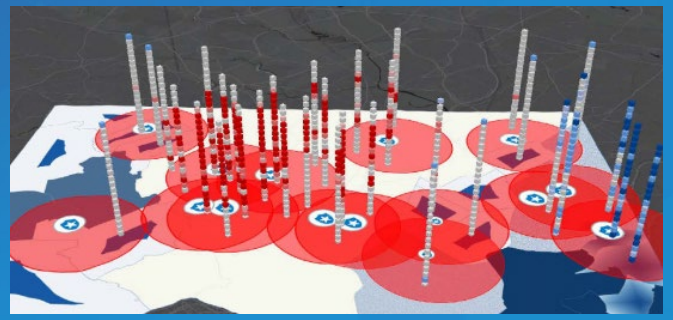
Importance of the Geographic Approach in Responding to Emergencies and Disasters

GIS | Public Safety & Disaster Response

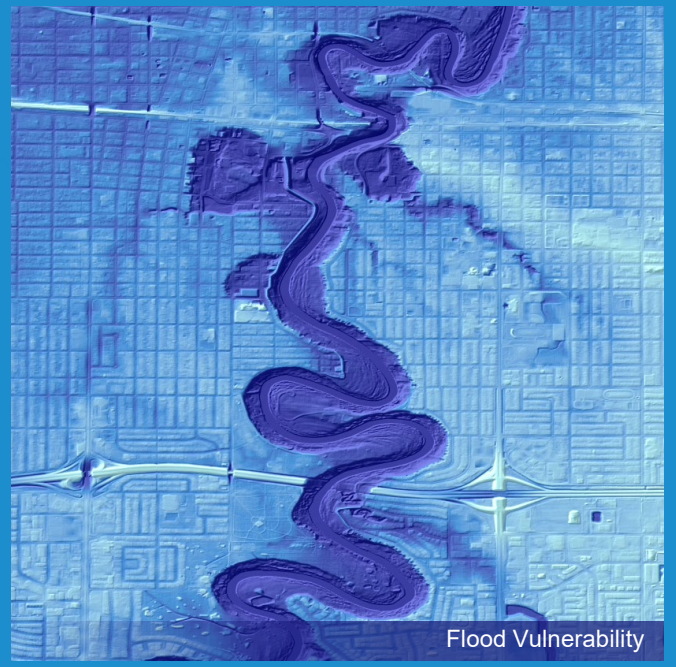
Public Safety

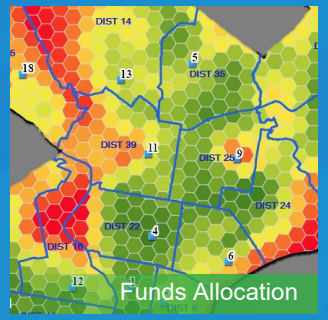


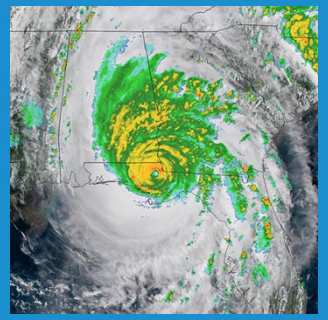




Disaster Response

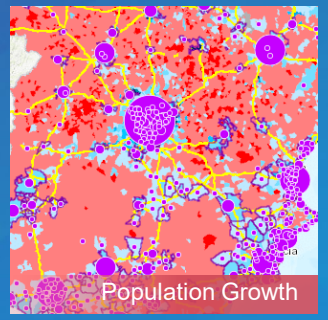


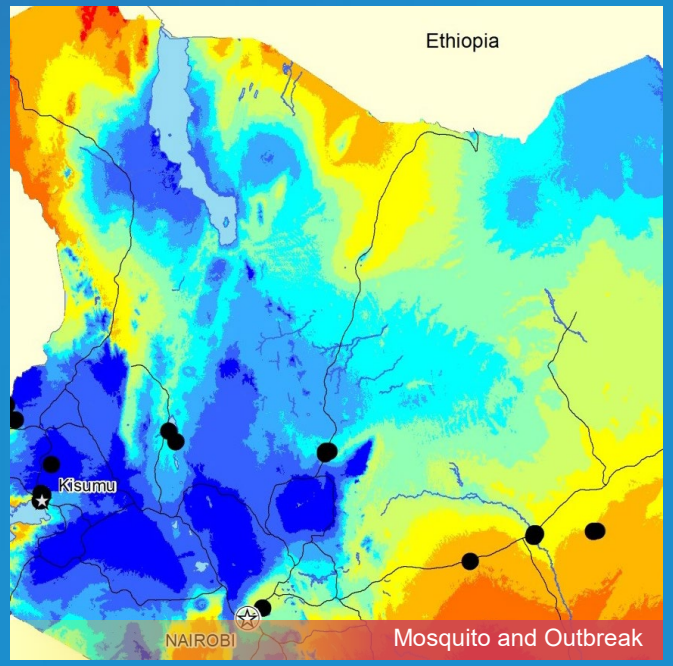




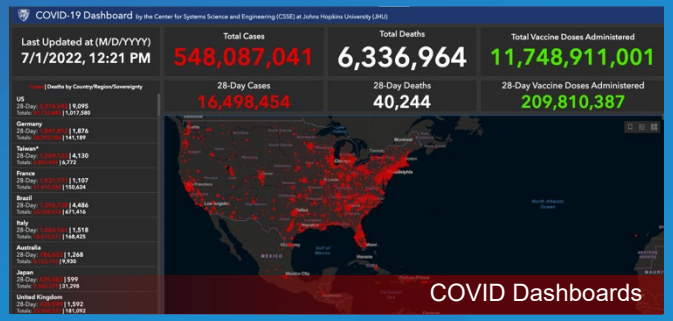
GIS | Demographics, Public Health, Education

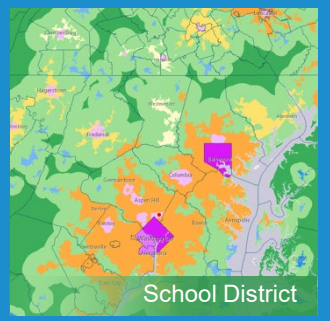
Demographics

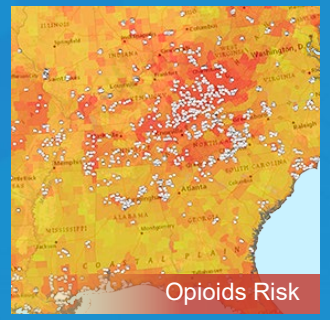




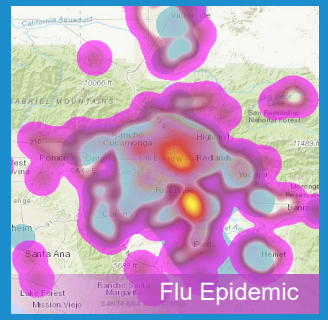
Education

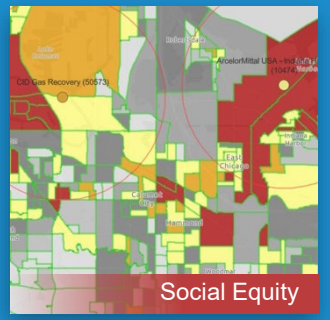




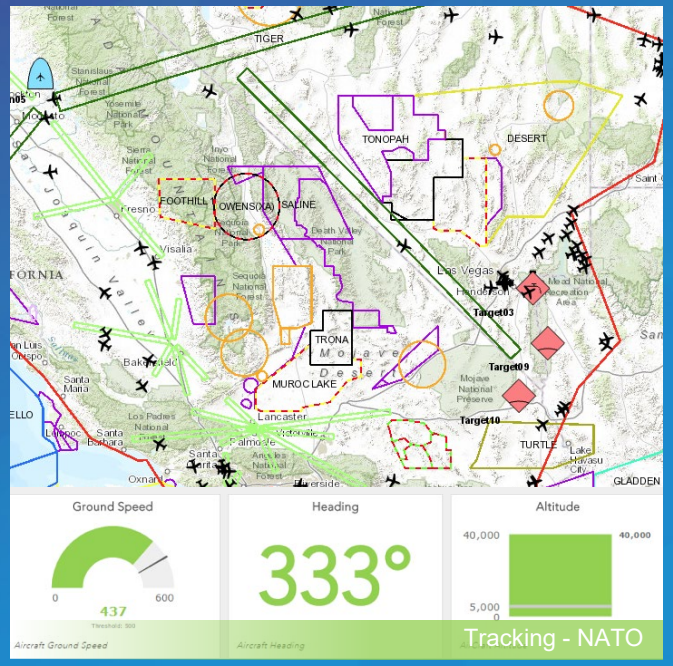


Public Health

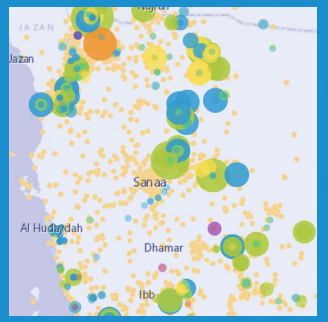


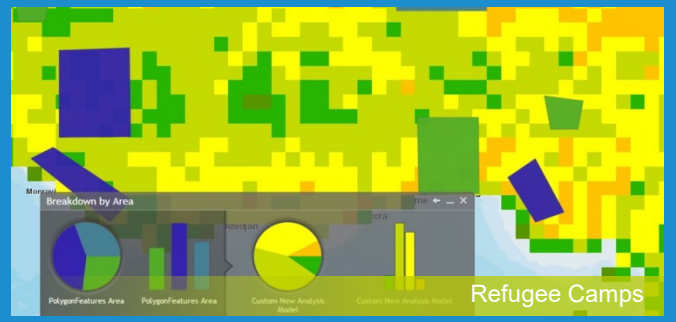


GIS | Civil Protection, Peacekeeping, & Humanitarian Response

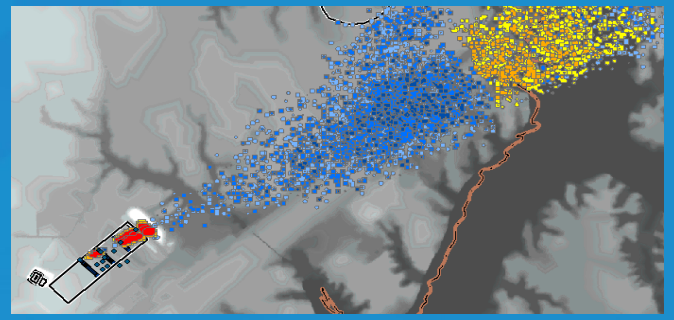


Peacekeeping





Civil Protection



Humanitarian Assistance

GIS | a complete and integrated system

Solutions for the most common operational challenges

Maintain Situational Awareness

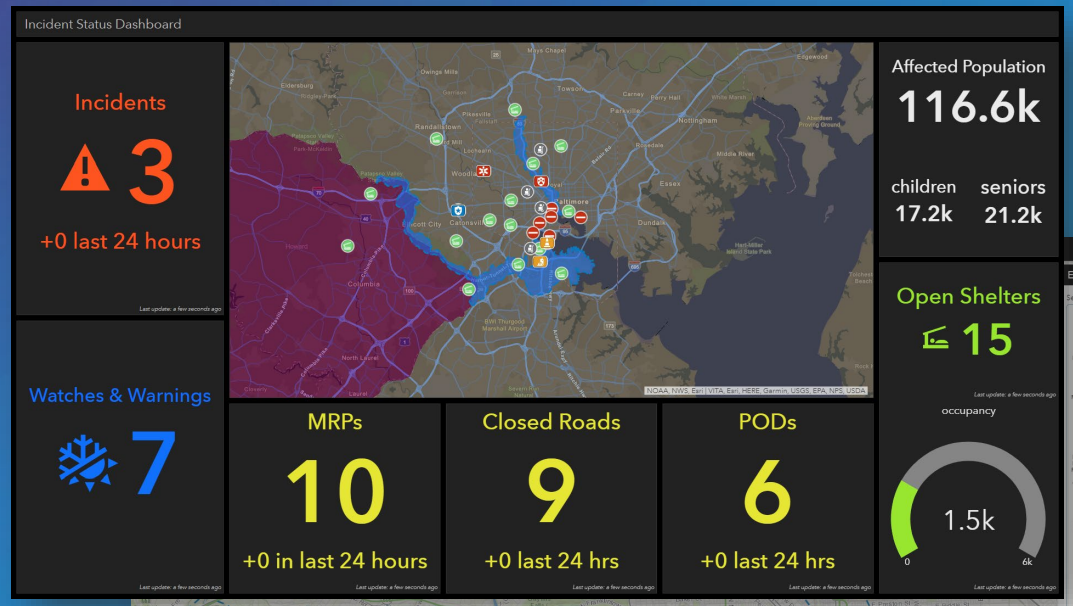
Conduct Damage Assessment

Manage Public Information

Maintain Situational Awareness

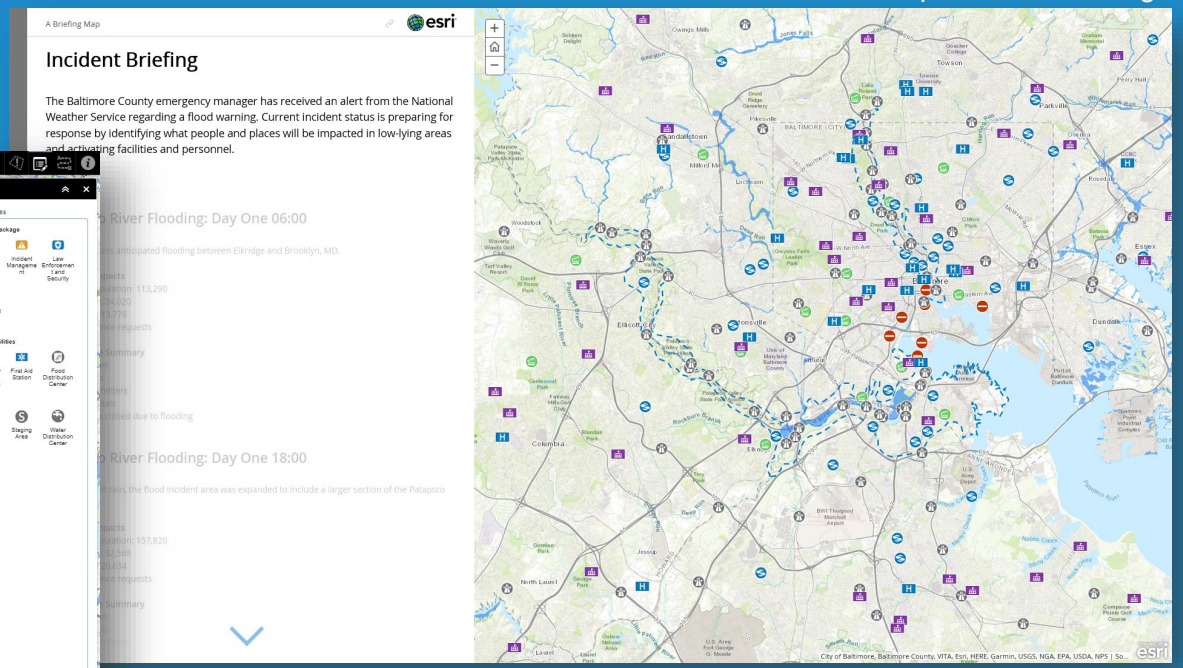
Monitor changing conditions. Put plans into action. Brief responding team in real-time.

Operations Dashboard



Operations Management

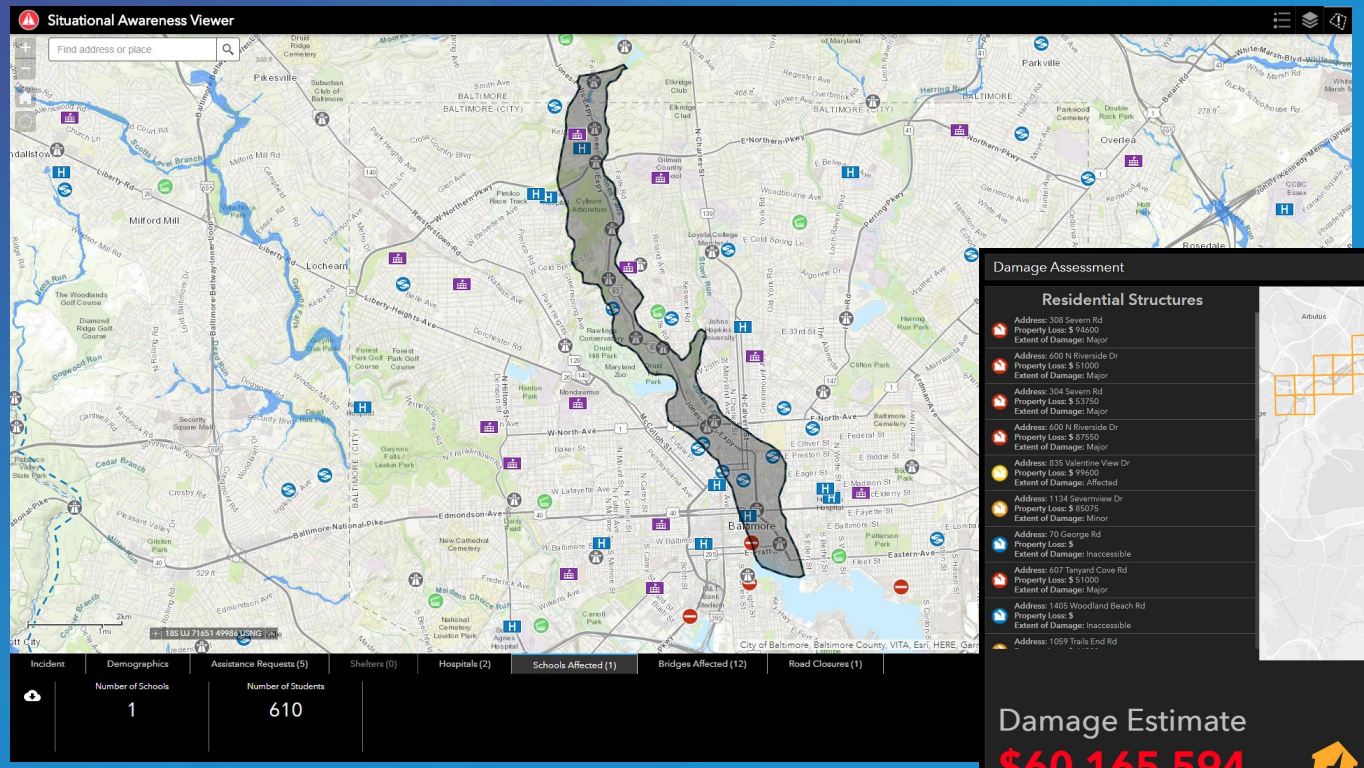
Operational Briefings



Anticipate your next move and make more informed decisions that can save lives and property.

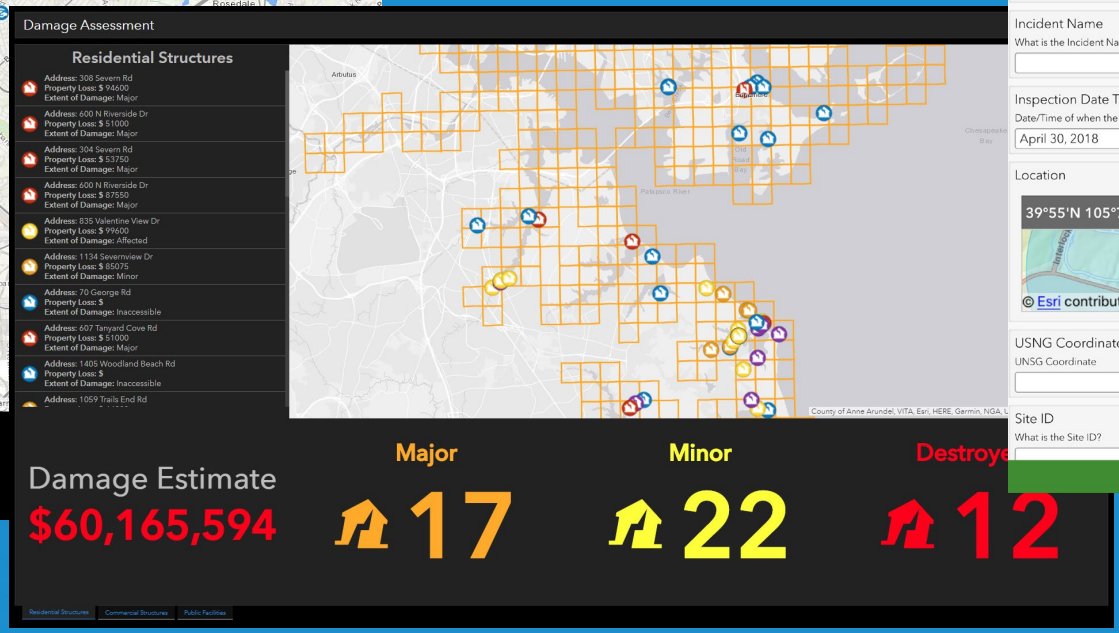
Conduct Damage Assessment

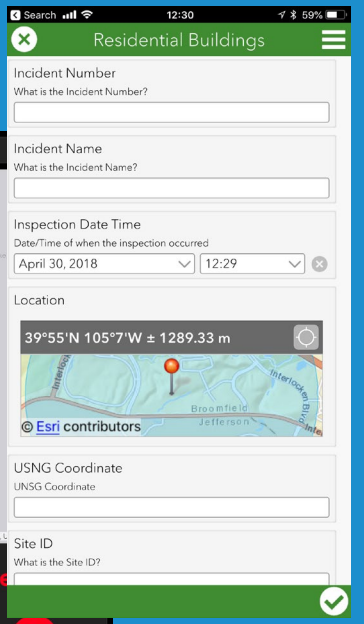
Understand potential impact. Conduct damage assessments. Monitor reporting thresholds for your disaster declaration.



Impact Analysis

Damage Assessment Collection & Reporting

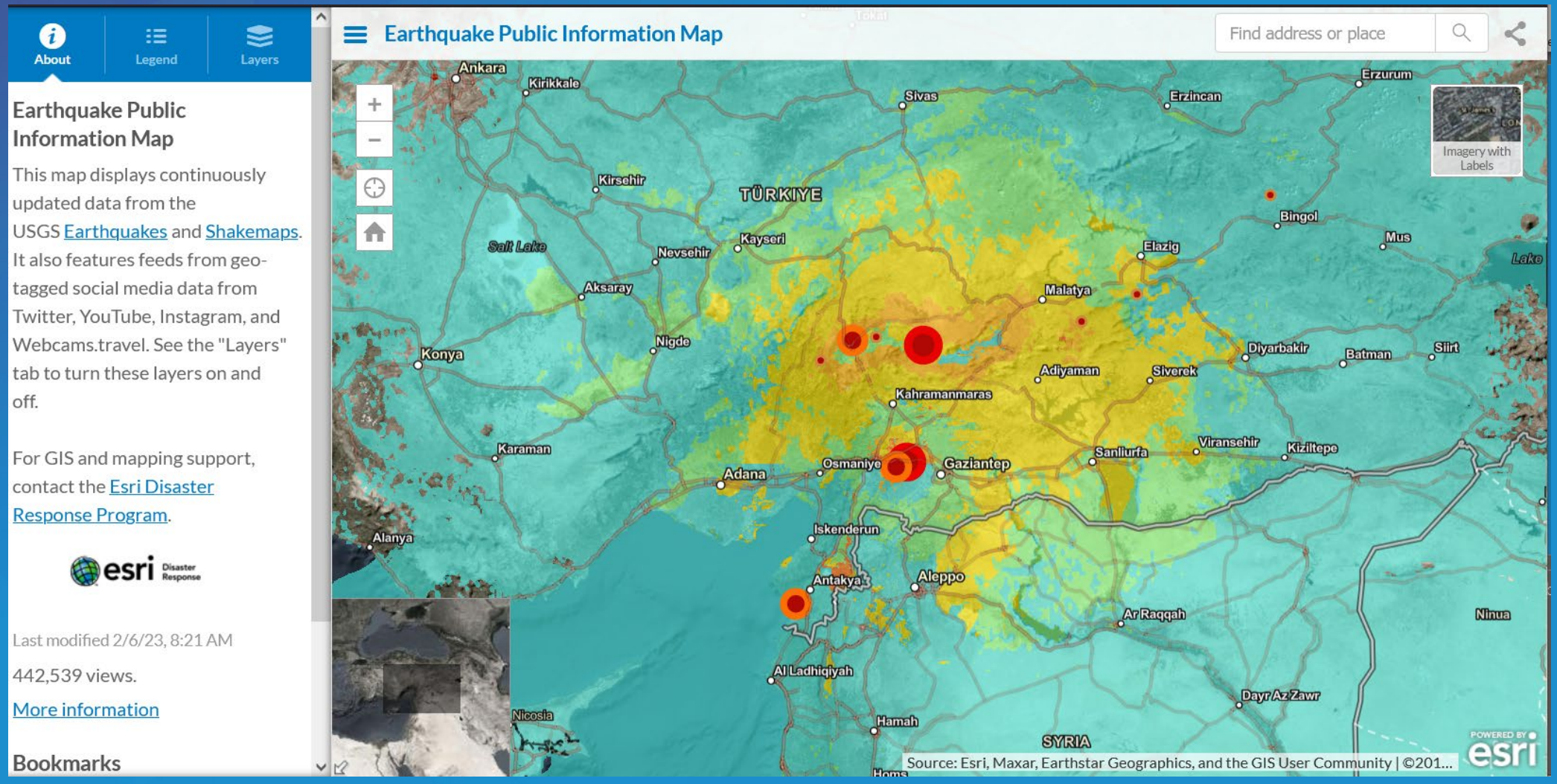




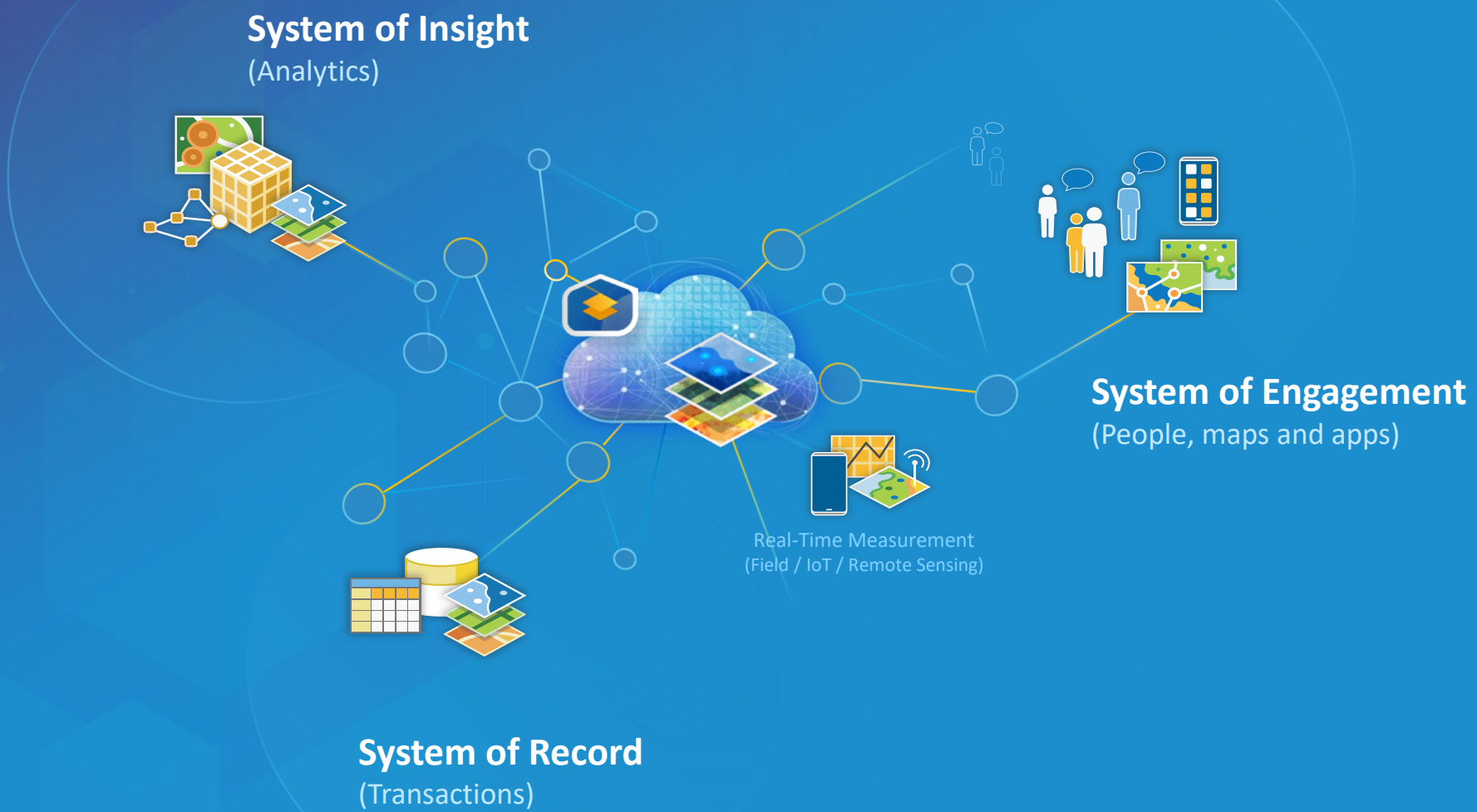
With lives at risk and disaster recovery funds on the line, time is critical.

Manage Public Information

Disseminate critical information that raises awareness and drives action.



GIS | supports efficient & holistic response to disasters



Why is Standardizing Names, Maps, and Data in the Emergency Response Important?

When it comes to emergency aid, having standardized information can make all the difference. Without it, response efforts can become disjointed and inefficient, leading to potentially disastrous outcomes e.g., duplication of efforts, gaps in coverage, and even conflicts between responders

Challenges in Emergency Aid without Standardized Information (1/3)

- Inconsistent geographical names can make it difficult for authorities to locate places on maps or GPS devices

While the 2010 Haiti earthquake, aid agencies and organizations rushed to provide assistance to those affected. However, the lack of standardized geographic names in Haiti made it difficult to coordinate aid efforts and deliver supplies to the right locations

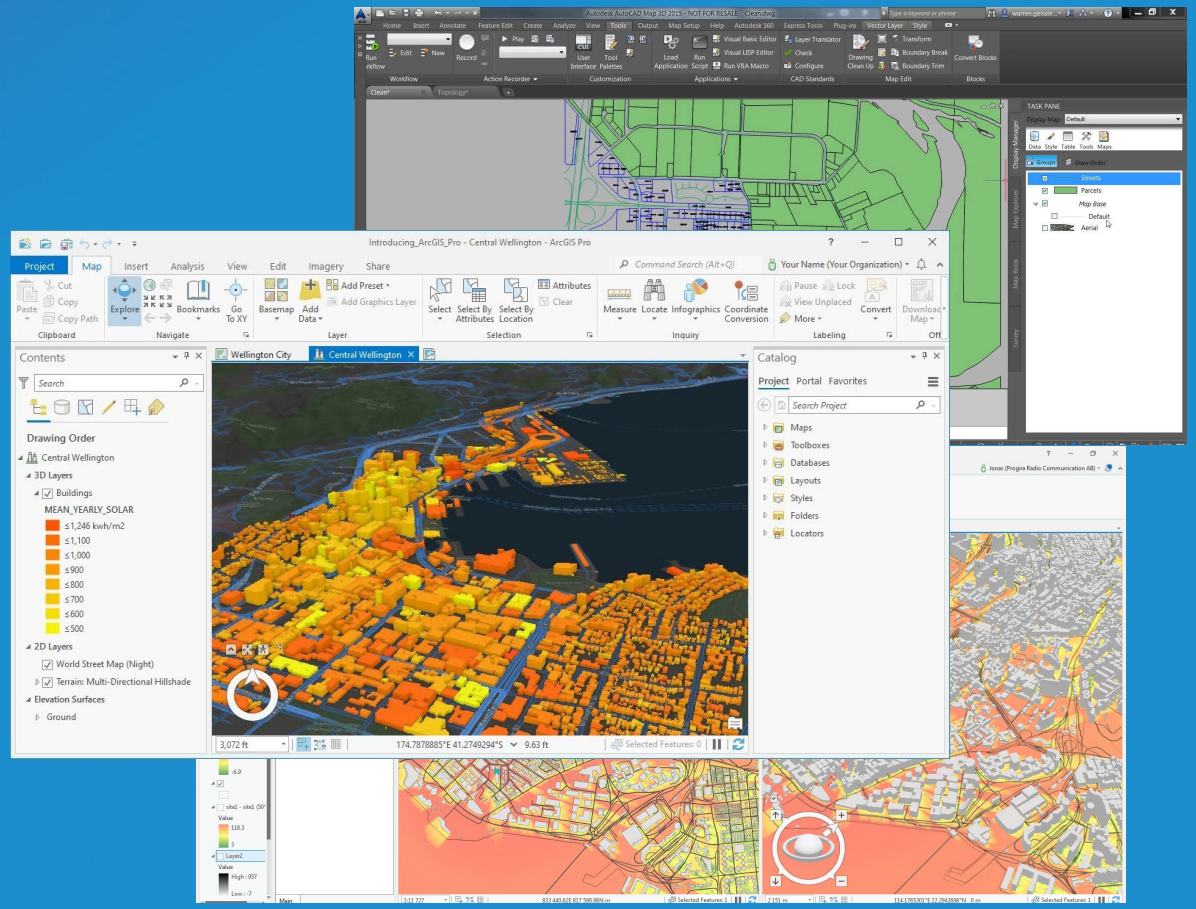
Challenges in Emergency Aid without Standardized Information (2/3)

- Inefficient resource allocation
  - The absence of reliable maps and data can have serious consequences for decision-making in emergency response cases. Emergency responders rely on accurate and up-to-date information to assess the situation and make informed decisions about how to allocate resources and respond to the crisis

Cyclone Idai in Mozambique in 2019, aid was often allocated to areas that were not the most severely affected, leaving those in the hardest-hit areas without the support they needed. This resulted in delayed response times, inefficient use of resources, and further suffering for those affected by the disaster.

Challenges in Emergency Aid without Standardized Information (3/3)

- Coordination challenges among aid organizations
  - GIS data can be stored in a variety of file formats, and if different organizations or agencies use different formats, it can be challenging to share data between them
  - GIS data is often organized using specific naming conventions, such as the use of standardized abbreviations or codes for different features. This can be challenging to communicate effectively about specific features or locations. For example, one organization may refer to a road as "Rd," while another uses "Road." This can lead to confusion and miscommunication, particularly in fast-paced emergency response situations.



Data Challenges

Data Challenges

- **Data Siloes**
  - Across government – in many departments/ministries
- **Data Availability**
  - Open data that is operational
  - Authoritative sub-national boundaries
  - Authoritative sub-national place names and gazetteers (geographic names)

- the Low and Middle Income Countries (LMIC)
  1. Operational data resides with IGOs and NGOs – not with local authorities
  2. Limited capacity of National Disaster Management Agencies (NDMA) to use geospatial information for a modern response

Data Needed for All Phases of the DRR lifecycle

- Current
- Authoritative
- Open/Accessible
- Metadata

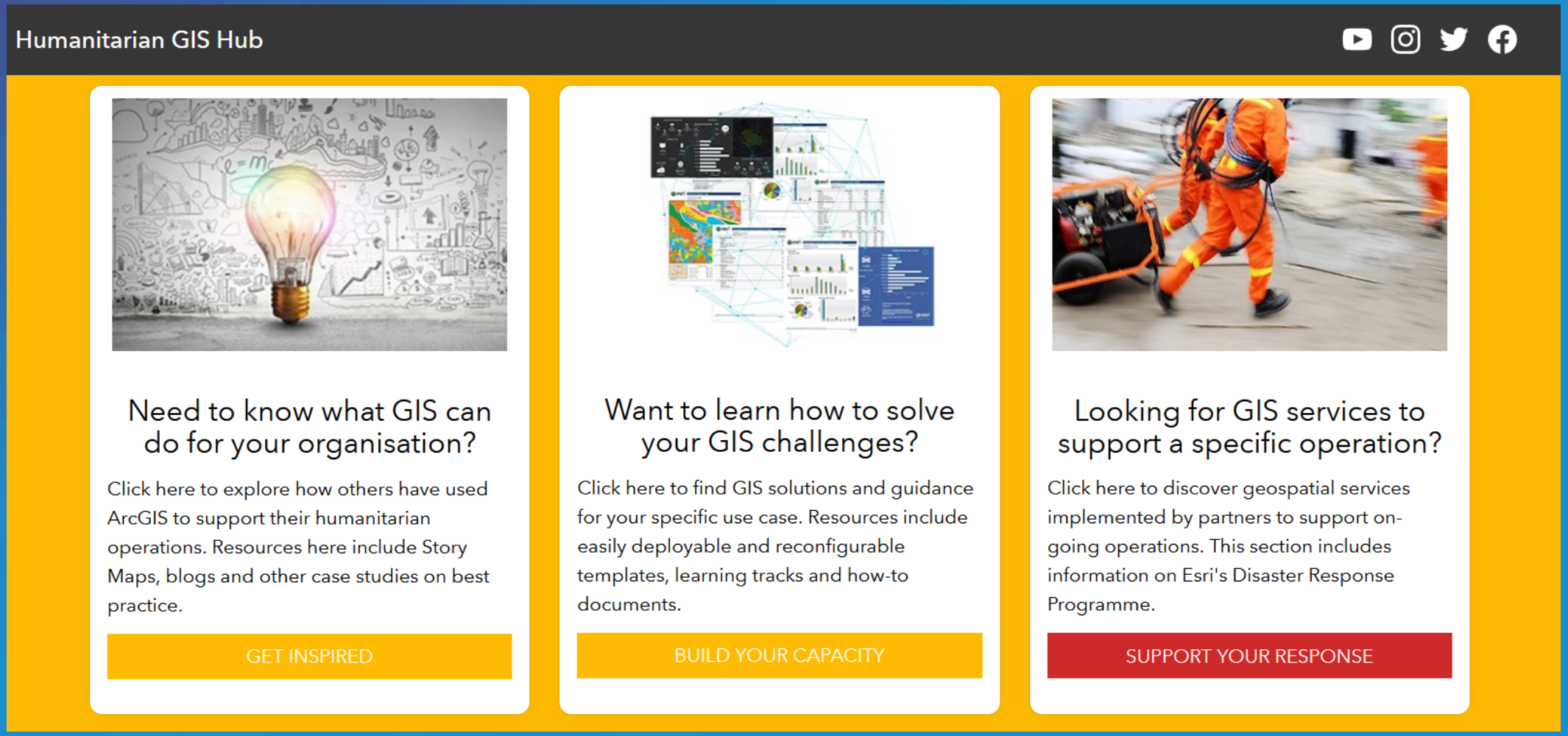
Data Preparedness

Food and Agriculture Organization (FAO) of the United Nations

DIEM – Data in Emergencies Hub
https://data-in-emergencies.fao.org

Humanitarian GIS Hub

Esri Humanitarian Solutions Team



https://explore-humanitarian.hub.arcgis.com/

Call to Action

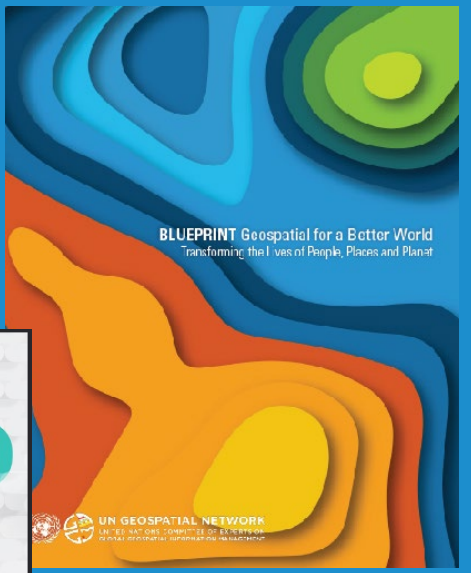
The Global Community needs to...

- Member States: Establish a **Geospatial Data Strategy**

  …including authoritative data for **geographic names** that are open and available for operational use during emergencies and disasters

- International Community: Foster the **capacity of NDMAs to use geospatial data** effectively

UN Geospatial Data Strategy



UN ESCWA Data Strategy

Recommendations for Promoting Standardization in Emergency Aid

Adoption of standardized naming conventions

- Encourage the use of globally recognized naming conventions
- Advocate for the integration of local knowledge and language in standardized names
- Development and sharing of accurate, up-to-date maps, This will require:
  - Having an up-to-date maps and introduce the state-of-the-art technologies that facilitates data updates
  - Encourage data sharing approach among different organization by defining sharing polices and data standards
  - Promote the idea of Open-Data portals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SERVING OUR USERS
. . . Working Together
to Make a Difference
Advancing GIS & The Geographic Approach
Engineering and Science Focused
Growing, Strong and Impactful
Promoting Geographic Thinking
. . . at a Global Scale