

Hazard mitigation and vulnerability assessment research paper sample

[Technology](#), [Internet](#)



1. The FEMA mapping homepage supports multiple resources including mapping and engineering tools and MIP web services. Nonetheless, the website is inherently difficult to navigate hence is not user-friendly. In terms of data, key emphasis is on flood risk assessment with the recently initiated Risk map building on the flood hazard data. The risk map homepage still focuses flood hazard data which, as FEMA acknowledges, forms the basis of risk assessment. Clicking on the map viewer, it is evident that only a map indicating the risk of floods in the United States and territories appears, rather than a comprehensive data on various forms of potential risks.

2. Hazus-MH is a critical risk assessment and a loss estimation tool which aids communities, businesses and states to prepare for, respond to, recover from and mitigate hazard events. As noted in the FEMA's website, Hazus-MH can provide estimates on hazard-related damage, prior to, during and after the disaster occurs. The tool can therefore, be useful to the emergency management of organizations although, there are a number of challenges that also arise.

Since Hazus-MH analyzes the potential loss estimates in terms of physical damage, economic loss and social impacts it provides local emergency management organizations with the opportunity to assess the vulnerability of facilities thereby helping to build safer and stronger communities.

Secondly, it provides local emergency management organization with the opportunity to develop mitigation, preparedness, map based disaster plans and response and recovery. The plans are also effective in prioritizing mitigation projects hence making them more effective. Hazus-MH may also

provide an opportunity to local emergency management organizations to identify areas at risks from hazards that may require special considerations in terms of special land use and building codes.

With regards to some data sets, Hazus-MH is not capable of calculating hands on disaster response and recovery information. At some point, the data needs to be combined with other programs. Another key challenge is that, its complexity may not make it very useful to local emergency management organizations. Additionally, the program has not been effective in predicting post disaster occurrence hence making effective response intricate. Besides, the program is largely reactive rather than proactive with regards to disaster mitigation.

3. Comparative to the FEMA's website, the EPA's databases is more user friendly in terms of risk communication to the general public. Information access is more convenient to the users. For example, users are able to access any location by just typing its location then choosing an option to map with the key categories being Air, Water, Waste, Land, Toxins and Radiations. In terms of mapping, the website provides further options such as Industry, Chemicals and program systems.

Comparative to the EPA's website, scorecard provides comparisons related to pollution problems within different communities in the United States. Nonetheless, the site lacks numerical and graphical data and focuses on integrating environmental data sources to enable users identify ecological and health threats within particular geographical areas. By extension, the

Scorecard website provides information on land, air and water pollutants, agricultural wastes, toxins, and chemicals and their health effects.

4. Based on a comparative analysis of the three websites, the Global Disaster Alert and Coordination System (GDACS) which is a cooperation framework between the European Commission, the United Nations and multiple disaster managers across the world is the most user friendly in terms of its, comprehensive content, user interface and the general presentation. The website lists all latest disasters across the world including earthquakes, tropical cyclones. The website also has a real time map overview of the latest disaster alerts and serves the function of improving alerts, coordinating responses to major disasters and exchanging disaster related information.

The World Data Center is also simplified and user friendly providing a wide range of data and resources. The website is nonetheless, not very suitable for the general public and may be useful to experts and researchers interested in global environmental trends. The World Bank website is also user friendly although it focuses in mapping locations of projects that have been financed by the organization to monitor development impact, coordination of projects so as to increase social accountability and transparency.

5. After conducting a comprehensive internet search, I have not been able to identify a single mapping source that integrates all types of hazards in a single location. This may be interpreted to mean that it is difficult to create

and consistently manage a single database that tracks and records all hazards within one location. This is because, with disasters happening in different geographical locations, multiple agencies, organizations and even entire nations are involved. Incorporating vulnerability capacity with hazard risk will certainly improve organizations and communities' preparedness and improve choices in terms of the appropriate actions to be taken to reduce disaster risks.

USGS. Earthquake Hazards Program. United States Geological Survey.

<http://earthquake.usgs.gov/>

The website provides excellent mapping for Earthquakes in the United States. The website also provides comprehensive assessment of earthquake impacts and hazards and records significant earthquakes across the globe. It is also interactive with a real time earthquake map showing the global distribution of the latest earthquakes. The site is assigned a 4/5 rating due to its interactive nature, relevant data quality and up to date data and information.

CA. gov. Seismic Shaking Hazard Assessment. State of California Department of Conservation. <http://www.consrv.ca.gov/cgs/rghm/psha/Pages/index.aspx>

The website maintained by the State of California's Department of conservation maintains probabilistic data on the likelihood of earthquake occurrences in California. The multiple maps are expressed in terms of probability and are constructed based on projections from history and fault

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slip rates. Since the site is largely probabilistic, it gets a 3/5 rating on the 1-5 scale.

NIEP. National Institute for Earth Physics: Seismic Hazards. <http://www.infp.ro/local-seismicity/seismic-hazard>

USGS. Latest Earthquakes in the World-Past 7 Days. http://earthquake.usgs.gov/earthquakes/recenteqsww/Quakes/quakes_all.php

The location provides a comprehensive list of the latest earthquakes greater than 2.5 magnitude in the United States and adjacent areas and magnitude 4.5 or greater in the rest of the World for the last 7 days. The data generated includes the map, magnitude, the time in which it occurred, latitude, longitude, depth and the region.

Securing the data was an intricate affair since the data is largely coded and deciphering required a Geographic Information System (GIS) expertise. The data required visualization, analysis and interpretation for a clear understanding of relationships, patterns and trends.

References

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