UCLouvain
CRED Centre for Research on the Epidemiology of Disasters

Enhancing the EM-DAT Database and Documentation

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Since June 2023, there have been a series of updates of the EM-DAT Project to enhance its accessibility for disaster risk management professionals, scientists, and members of the public interested in the human impact of hazards. The recent focus has been on improving the quality and transparency of EM-DAT's content descriptions, data collection methods, and limitations. The changes have been made with the aim of providing better accuracy and transparency in supporting disaster risk science, management, and policymaking. Based on feedback from users and experts, we have made several improvements, including a redesigned website, a dedicated portal for documentation, and new open-source tools that make data analysis easier.

The EM-DAT Website

The EM-DAT Project website (https://emdat.be) has been redesigned with a modern, secure, maintainable, and accessible layout, serving as the key entry point to the project. Our main goal was to introduce new features and improvements without disrupting the existing user experience.

To accomplish this goal, we have implemented a versioning system for updates and introduced new communication channels on our website, which include:

- The *News* section, which provides updates on team activities, new partnerships, technical products, and improvements, educational materials, and scientific publications.
- Two sections that summarize discussions from the annual meetings of the Scientific and Technical Advisory Group (STAG) and biennial sessions of the Scientific Committee (SciCom).

A curated list of publications and documents related to EM-DAT activities, such as scientific publications, technical reports, and newsletters, with a specific focus on works related to EM-DAT and disaster data.

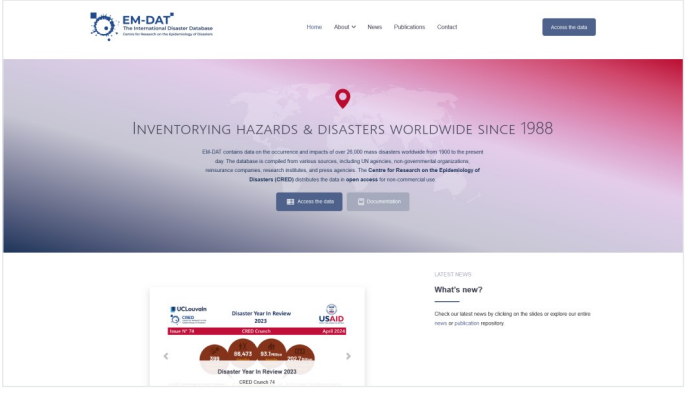

Fig. 1. Homepage of the New EM-DAT Website Released in June, 2023

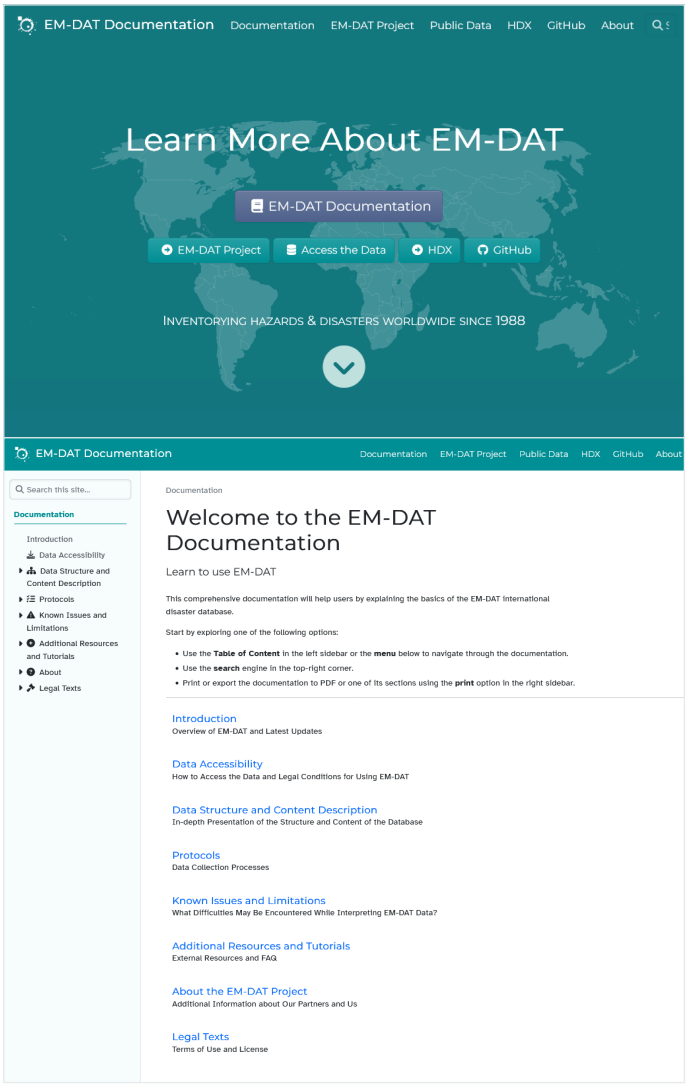

Fig. 2. Homepages of the New EM-DAT Documentation Released in September, 2023

The EM-DAT Documentation

In September 2023, we significantly expanded the EM-DAT guidelines and launched a new documentation portal. This portal provides in-depth access to the EM-DAT database, transforming it from a brief 2,000-word overview into a comprehensive resource of over 15,000 words. Clear, detailed documentation is crucial to prevent data misuse and misinterpretation.

We have launched the documentation portal (https://doc.emdat.be) alongside the renewed public data portal. It is regularly updated and a change log in the introduction helps track revisions. The documentation provides detailed descriptions of the database content, protocols, accessibility, known limitations, and complementary resources. The structure is designed to aid users comprehend EM-DAT and easily locate specific topics. Users can perform quick searches or navigate through the detailed topic sections listed in Table 1.

Table 1. Documentation Sections and Descriptions

Section	Description
Introduction	General introduction to the EM-DAT Project and journal of updates related to the database and the documentation website.
Data Accessibility	General description of the access policy for the EM-DAT Public Table from the Public Portal (https://public.emdat.be) or the Country Profiles available on the Humanitarian Data eXchange platform
Data Structure and Content Description	Detailed definitions of the database structure. This section contains multiple subsections on: the internal structure of the database, the content of the EM-DAT Public Table, the classification used to categorize events, the kinds of magnitudes reported for different categories of events, the steps of collection, aggregation, and reporting impact variables, spatial information, and sources of information used in data collection.
Protocols	Processes involved in the collection and validation of EM-DAT with subsections on: entry criteria, encoding, quality control, and validation procedures, and economic adjustment.
Known Issues and Limitations	Presentations of the most important biases and limitations to be aware of when analyzing and interpreting EM-DAT data.
Additional Resources and Tutorials	Data handling and map creation tutorials for Python, links to interesting resources and frequently asked questions (FAQ).
About the EM-DAT Project	The Project's general history, directions, and its partners.
Legal Texts	Terms of Use and Commercial License Texts.

We have organized the information to differentiate practical access to the data, the internal database structure, field meanings and classifications, internal protocols, and data collection cycles, validation, and quality control, including the limitations these processes introduce.

Moreover, we intend to collect external resources that are relevant to those interested in reducing the impact of hazards and mitigating risks, and to include them on our documentation website. Transparency and accessibility are our core values, and we are committed to continuously improving based on user feedback.

Tools and Resources

Another priority for both users and the EM-DAT team is enhancing data accessibility and processing, considering the range of profiles within the EM-DAT community. Users of EM-DAT come from different backgrounds and professional contexts, with varying abilities to access and analyze the data. Instead of creating one-size-fits-all data solutions, which can often be difficult to maintain, we have prioritized the development of customized resources that cater to specific user groups. By making these resources open-source, we empower the EM-DAT community to further develop and customize them according to their specific needs. Some of these tools have already been released and are publicly available:

- Python Tutorials: Available on both GitHub and the Documentation website, these tutorials are designed for programmers and scientists. They cover the basics of data handling and hazard impact mapping using the EM-DAT Public Table.
- EM-VIEW Dashboard: This dashboard features interactive panels that simplify the EM-DAT exploratory analysis, allowing for visualizations without requiring programming skills. Also available on GitHub, this tool can be modified by programmers to meet their needs.

The 'external resources' section highlights tools and community-contributed resources that enhance the EM-DAT experience. We are planning to broaden our range of tools and training materials and make them available through additional channels and portals. We encourage you to contribute resources and collaborate with the EM-DAT team.

CRED Updates

- Access more information on the EM-VIEW disaster dashboard through our news release: https://www.emdat.be/news/2024/09/em-view-community-disaster-dashboard/
- Subscribe to the new EM-DAT GitHub Repository to stay tuned to our EM-DAT programming solution: https://github.com/em-dat
- New CRED Report: Panta Bhandari, M., Tonnelier, M., Delforge, D., Jimee, G. K., Bashyal, G. K., Below, R., Pluen, G., Shoshani, O., van Loenhout, J., and Speybroeck, N.: *Post-disaster epidemic surveillance in Nepal*, http://hdl.handle.net/2078.1/290057, 2024

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