UCLouvain
Centre for Research on the Epidemiology of Disasters CRED

The Emergency Events Database (EM-DAT)
The last 25 years in research

USAID FROM THE AMERICAN PEOPLE

Issue No. 67 | Cred Crunch | June 2022

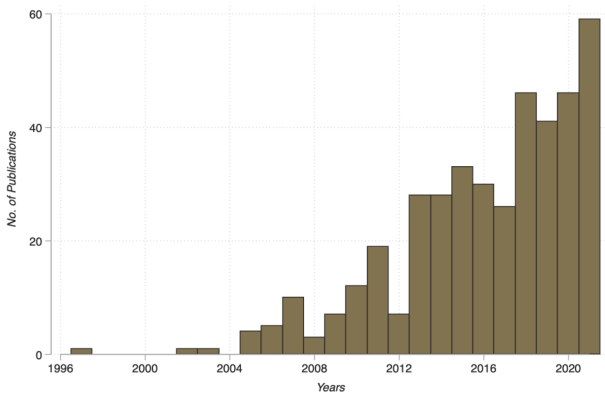
Over the last 25 years (1996 – 2021), the use of the Emergency Events Database (EM-DAT) in empirical studies has increased considerably, along with its reach across disciplines.

The availability of historical data on disaster events serves a multitude of purposes across the public and private domains. It enables both effective disaster relief response and prospective disaster resilience planning. Various disaster databases exist at local, national, regional and global levels to serve this demand. The Emergency Events Database (EM-DAT) maintained by the Centre for Research on Epidemiology of Disasters (CRED) is one of six global disaster databases [1]. EM-DAT is publicly available and reports the occurrence of disasters attributed to natural, technological and biological hazards, as well as their health and economic consequences. Since its creation in 1988, EM-DAT has been widely cited and utilised across numerous research fields. This CRED Crunch issue looks at the research contribution of EM-DAT over the last 25 years (1996 – 2021). Through an examination of the empirical literature which utilises EM- DAT as a primary or secondary data source (see Box 1), both the frequency of use and its reach across research disciplines over the last 25 years are presented.

Box 1: A systematic review was conducted on January 2022 in line with the Preferred Reporting Items of Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Electronic databases: EconPapers (RePEc), EconLit (Ovid), EMBASE, MEDLINE (PubMed), Web of Science, Global Health Database (EBSCOhost), the Cochrane Library, Scopus, JSTOR and Google Scholar were searched. Key search terms included 'Emergency Events Database', 'EM-DAT', 'International Disaster Database' and 'CRED'. Only papers considered to be empirical and quantitative in nature and published between 1996 and 2021 were considered eligible. Of the initial 2,127 search results, 406 papers were included in the analysis, comprising journal articles, book chapters, reports, and working papers. Data on the publication year and source journal were extracted for each paper and analysed using descriptive statistics.

From the early 2000's, there has been a clear, positive trend in the use of EM-DAT in the empirical literature (Figure 1). In 2021, the number of empirical papers which utilised EM-DAT as a primary or secondary data source peaked at 59. In addition, the use of EM-DAT in the empirical literature was not disrupted as a result of the COVID-19 pandemic, with an average of 49 papers per year published between 2019 and 2021.

Figure 1. Use of EM-DAT in the empirical literature over the last 25 years (1996 – 2021)



Over the last 25 years, EM-DAT has been utilised across numerous scientific research disciplines, exemplifying its broad research contribution (Figure 2). Papers sourced from natural science journals attributed the majority of papers utilising EM-DAT as a primary or secondary data source (33.7%) followed by journals specialising in economics (24.6%) and multi-disciplinary journals (19.2%). The utilisation of EM-DAT across scientific research disciplines has steadily increased since the late 1990's (Figure 3). From 1996 to 2000, the entirety of papers utilising EM-DAT came from journals related to health sciences. In contrast, from 2011 onwards, EM-DAT has been utilised across all scientific research disciplines. Papers sourced from journals related to economics and natural sciences were the most represented in the last 20 years, where-as journals related to engineering were the least represented, appearing only in the past ten years .

Figure 2. The overall research contribution of EM-DAT by scientific research discipline in the last 25 years

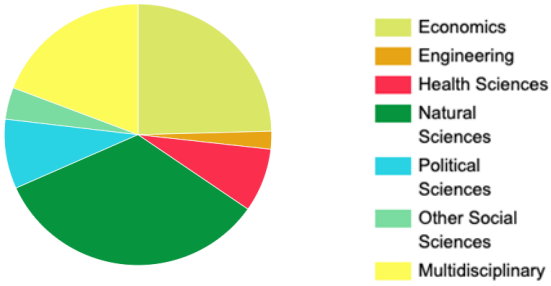
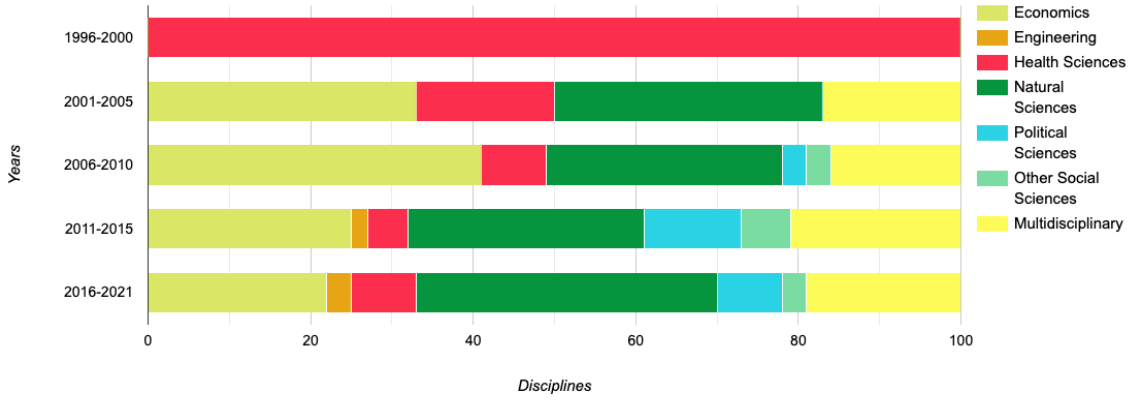


Figure 3. Trends in the utilisation of EM-DAT by scientific research discipline in the last 25 years (1996 – 2021). Years are grouped by 5-year intervals along the y axis. For each 5-year interval, the proportion (%) of papers sourced from journals of each scientific research discipline is presented



Concluding remarks

From the 1980's there has been a sharp rise in the reported occurrence of disaster events, including their human and economic consequences [2]. Accordingly, there has been growing interest in the research of disasters. This has been fuelled by increasing media attention of topical disaster events, as well as international commitments to reduce disaster risk and improve disaster resilience, such as the COP summits, 2005 – 2015 Hyogo Framework and 2015 – 2030 Sendai framework. In addition, the consequences of disasters are often extensive and multidimensional, necessitating an inter-disciplinary approach to disaster research. As a result, it is unsurprising that the use of EM-DAT as a primary or secondary data source in empirical research has increased over the last 25 years. Moreover, it is likely to continue to increase in the coming years.

References

1. Mazhin S, Farrokhi M, Noroozi M, *et al.* Worldwide disaster loss and damage databases: A systematic review. *J Educ Health Promot* 2021;**10**.
2. CRED . Human Cost of Disasters (2000-2019) . *CRED Crunch Newsletter Issue No 61*. [Online]

CRED updates and recent publications

CRED. '2021 Disasters in numbers' , Brussels: CRED, 2022—available at https://cred.be/sites/default/files/2021_EMDAT_report.pdf

Ogbu, J.T., Rodriguez-Llanes, J., Rodrigues Leal Moitinho De Almeida, M., Speybroeck, N. Guha-Sapir, D. Human insecurity and child deaths in conflict: evidence for improved response in Yemen, International Journal of Epidemiology,; 1 (3) : 847-857 (2022). doi:10.1093/ije/dyac038.

@CREDUCL
Analysis and writing by Aditi Kharb, Rebecca Louise Jones & Sandy Tubeuf
Editing by Niko Speybroeck and Regina Below
Centre for Research on the Epidemiology of Disasters (CRED), Research Institute Health & Society (IRSS), UCLouvain