Scientific research on disasters represents only 0.22 percent of global scholarly output

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Despite loss of life and economic devastation worldwide due to increasingly frequent natural and man-made disasters, scientific research on disasters represents a small percentage of scholarly output, a study by Elsevier, the global information analytics business specializing in science and health, shows..

Furthermore, countries with the highest death tolls from disasters tend to be low-income countries and have low-levels of scholarly output overall and in disaster science; countries with higher research output overall, as well as in disaster science, tend to be high-income countries and sustain the greatest economic losses from disasters.

These are several of findings presented in a new study, "A Global Outlook on Disaster Science," released today by Elsevier.

Dr. Takako Izumi, Associate Professor at Tohoku University, International Research Institute of Disaster Science (IRIDeS) and Director of the Association of Pacific Rim Universities (APRU) Multi-Hazards Program, said: ??The impact of disasters is increasing, as demonstrated by recent devastating storms, hurricanes, flooding, and earthquakes in the U.S., Mexico and the Caribbean. Science plays a crucial role in disaster management, however findings are not always sufficiently leveraged into practice. It??s essential that we strengthen the collaboration between researchers, practitioners, and policymakers, to better understand local needs, and conduct collaborative research with countries that are particularly vulnerable to disaster risks.

Dr. Izumi is one of the 10 experts offering her expertise in contextualizing the methodology and data presented in the report.

Based on Scopus data the study analyzes more than 27,000 disaster science papers published between 2012 and 2016. It provides an evidence-based overview of the field of disaster science and offers insights that can help inform policy and decision makers to improve resilience to disasters both locally and globally.

Results are framed around measures of research activity (output, impact, and specialization) for disaster science, as well for each of the four stages of disaster risk management: prevention, preparedness, response, recovery; and the ten disaster types defined by the Global Sendai Framework for Disaster Risk Reduction adopted by 187 United Nations member states in 2015??.

A panel of 10 internationally recognized disaster science experts from partner organizations were consulted to identify and define the corpus of scholarly data to include in analyses.

Comparator countries analyzed in the report include: Brazil, China, France, Germany, India, Italy, Japan, Mexico, the United Kingdom, and the United States.

Overall key findings (2012-2016):

- There were 27,273 scholarly publications covering disaster science, representing 0.22% of the global scholarly output
- There is more scholarly output on disaster management stages: prevention (17,598) and preparedness (15,125) than response (11,623) and recovery (3,671)
- Across all 10 disaster types scholarly output on geophysical disasters is the greatest (9,571 publications)

- Disaster types geophysical (9,571), meteorological (6,767), chemical & radiological (6,445), and hydrological (6,237) all have less than 5,000 publications

Among the 10 comparator countries (2012-2016):

- China publishes the most papers in disaster science overall (6,301), as well as on the disaster risk management stage: prevention (4,416)
- The United States publishes the most papers on disaster risk management stages: preparedness (3,677), response (3,312), and recovery (1,056)
- Japan suffers the highest economic loss resulting from disasters as a share of its GDP, and has the highest relative research activity index in disaster science (i.e. 0.66% of Japan??s research output is in disaster science, which is three times higher than the share of global output in disaster science, 0.22%)
- Mexico and Brazil have the highest impact in disaster science research due to large scale international collaborations, 8.93 and 2.94 respectively, followed by France (2.53), Germany (1.96), Italy (2.44), and the UK (2.11)

There is a unified call for cooperation and networking among scientists, policymakers, and practitioners, as well as strengthening of disaster science research capacity more generally, said Dr. Anders Karlsson, VP Academic Relations, Global Strategic Networks at Elsevier. Elsevier, together with our partners and experts and in accordance with the goals of the Sendai Framework, is responding to this call with this quantitative analysis of disaster science research,?? he added.

This report is part of Elsevier's continued commitment to support the United Nations' Sustainable Development Goals, and follows the reports Sustainability in the Global Research Landscape and Gender in the

Global Research Landscape, as well as its contributions to the RELX Group SDG Resource Center.

The report is based on Elsevier's Scopus data supplemented with data from The Global Assessment Report on Disaster Risk Reduction Cycle 2015, The IFRC 2015 Disaster Report, and additional sources such as the World Bank and Taiwan Statistical Data book.

The UN facilitated the adoption of the Sendai Framework for Disaster Risk Reduction 2015-2030 by 187 member states. The framework calls for a stronger role for science and technology in practical risk reduction and in supporting response and recovery after disasters. The Sendai Framework links research to key priorities, including understanding disaster causes, investing in resilience, and strengthening governance. The ten disaster types as defined by the Sendai Framework are: Geophysical, Meteorological, Chemical & Radiological, Hydrological, Biological, Climatological, Technological, Environmental, Transportation, Extra-Terrestrial.

More information: A Global Outlook on Disaster Science. www.elsevier.com/research-inte … /disasterscience2017

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