

As well as disasters related to natural hazards, EM-DAT reports on the occurrence and impacts of technological disasters, which are categorized into three subgroups: industrial, transport, and miscellaneous accidents. Technological disasters accounted for 41% of EM-DAT entries (n = 5,390) between 2000 and 2021 and accounted for a total of 166,068 reported deaths. Of these records, information on the number of people affected is available for 63% of records, whilst only 1% of records contain information on economic losses. Accordingly, technological disasters affected 2,638,985 people in total and caused \$63,178 million worth of losses (in US\$ current value). In particular, three technological disasters accounted for the majority of the economic losses: the explosion at the port of Lebanon in 2020; the oil spill resulting from the Prestige tanker, that sank off Spain’s northwestern coast in 2002; and the explosion and oil spill on the Deepwater Horizon platform in 2010 in the Gulf of Mexico.

There has been a considerable decrease in the occurrence of technological disasters, highlighted in issue 60 of the Cred Crunch. The newsletter at hand will look more closely at the spatial and temporal patterns of technological disaster over the last 20 years.

Technological disaster trends (2000-2021)

Figure 1 shows the annual occurrence of technological hazards, separated by subgroup, as well as the corresponding number of total deaths. The occurrence of technological dis-

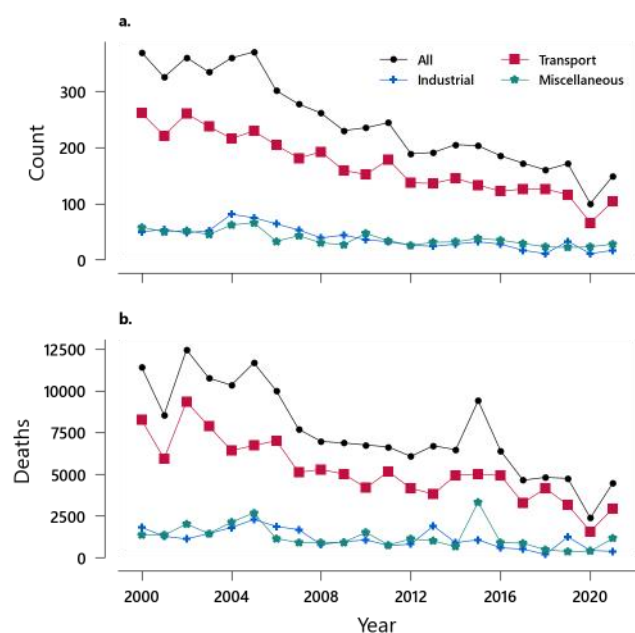


Fig.1. Time series of technological disasters (a) occurrence and (b) reported deaths over the 2000-2021 period.

asters and the total number of deaths decreased from 2000 - 2021, with, if assuming a linear decrease, approximately 12 less technological disasters occurring annually and 357 less deaths due to technological disasters annually.

Transport accidents comprised 69% of all technological disasters. The occurrence of transport accidents decreased by approximately 8 annually and the number of deaths due to transport decreased by 251 annually. A substantial decrease in the occurrence of transport accidents was observed in 2020, which was likely due to the effects of the COVID-19 pandemic or due to potential reporting bias. Conversely, there was an increase in miscellaneous accidents in 2015, partly explained by the tragic event of the Mina stampede, which resulted in 2,000 deaths.

Transport accidents

Figure 2 shows the annual occurrence of transport accidents and the subsequent deaths presented by subtype: air, rail, road, and water. The trend of transport accidents related occurrences is driven by a decrease in road transport accidents, particularly between 2000 and 2010. The decreasing transport related mortality trend is observed for each of the subtypes, with the road’s related transport accidents showing the most marked decrease of 121 deaths/yr.

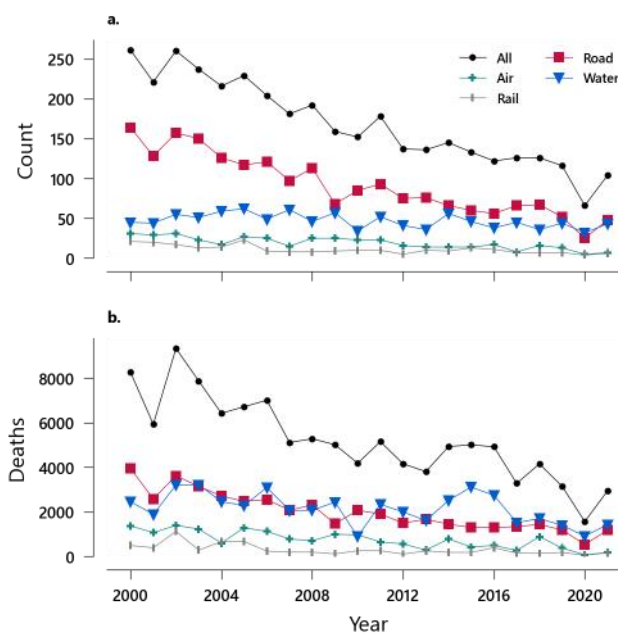


Fig.2. Time series of transport accidents (a) occurrence and (b) reported deaths over the 2000-2021 period.

From 2016-2018, water-related transport accident occurrences increased, in large part due to the Mediterranean migrant crisis, as shown in Figure 3, with countries such as Italy and

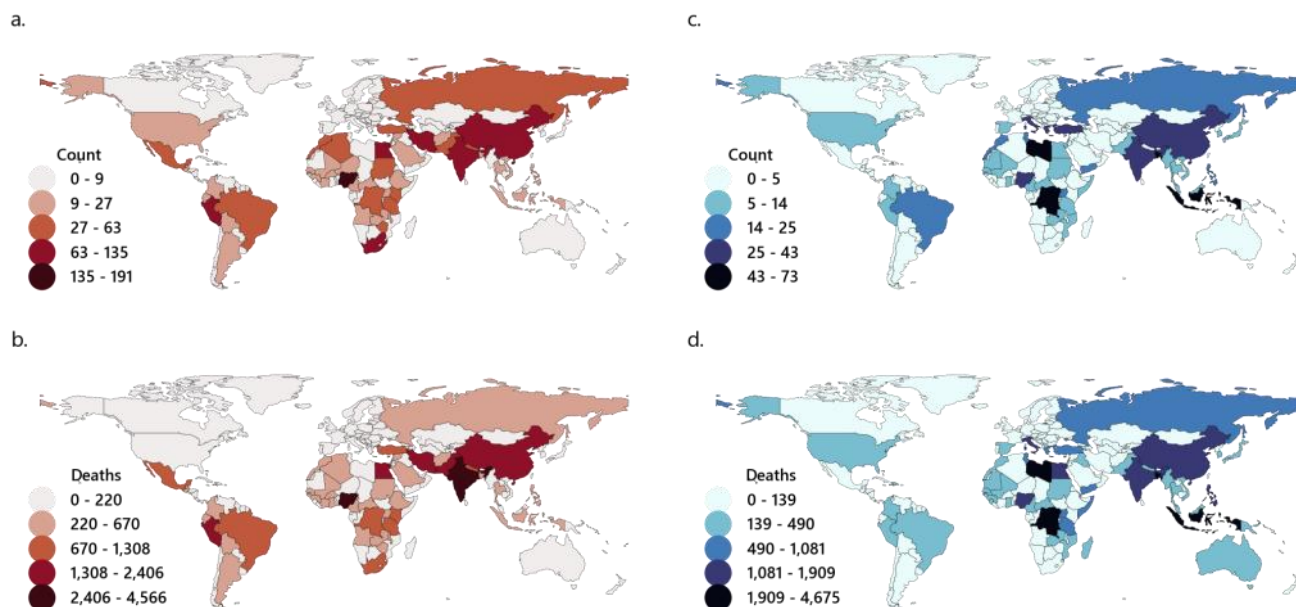


Fig.3. Global mapping of transport accidents (a) total occurrence of road-related accidents, (b) total deaths of road-related accidents, (c) total occurrence of water-related accidents, and (d) total deaths for water-related accidents.

Libya, being particularly exposed to water transport accidents. Note that in EM-DAT, records of shipwrecks (like other transport accidents) are attributed to the countries where they occur. In Africa, Nigeria and the Democratic Republic of Congo were frequently affected by water transport accident. The Senegalese boat *MV Le Joola* shipwrecked off the coast of Gambia in 2002 resulted in the deadliest shipwreck of the 21st century, killing more than 1800 people. Water disasters occurrences and related deaths showed a decrease for Asia only (Table 1).

Road-related accidents occurred most frequently in Africa and Asia, but occurrences have been decreasing over the last two decades (Fig. 3 and Table 1). To a lesser degree, South America also experienced a decrease in road accident related deaths. Notably, accidents reported in EM-DAT, are those that meet the EM-DAT inclusion criteria of at least 10 deaths or 100 people affected, and the data therefore include only major accidents involving large transport vehicles such as trucks or buses. Decreasing trends should consequently be interpreted with care. According to the 2018 WHO Global status report on road safety*, numbers of road deaths keep increasing globally, especially in Africa and Asia, with globally 1.35 million deaths explained by road traffic accidents in 2016, which is much higher than the numbers reported here. In response to this alarming situation, the United Nations recently launched the 2021-2030 Decade of Action for Road Safety.

* <https://apps.who.int/iris/handle/10665/276462>

Table 1. Total occurrence and deaths and 2000-2021 trends (linear) per continent for road and water-related transport accidents.

Continent	Road		Water	
	Count	Deaths	Count	Deaths
Africa	902	19,311	416	21,102
Asia	654	15,382	376	18,350
Europe	98	1,631	103	3,915
North America	114	2,332	36	994
Oceania	0	0	8	610
South America	236	4,944	42	1,029

¹ the minus sign indicates a decreasing trend. Non significant trends are not reported.

CRED updates and recent publications

New publication:

- Huang, Kai-Sen ; He, Ding-Xiu ; Tao, Qianlan ; Wang, Yan-Yan ; Yang, Yong-Qiang ; Zhang, Biao ; Mai, Gang ; Guha-Sapir, Debarati. Changes in the incidence and prevalence of ischemic stroke and associations with natural disasters: an ecological study in 193 countries. In: Scientific Reports, Vol. 12, no.1, p. 8p. (2022). doi:[10.1038/s41598-022-05288-7](https://doi.org/10.1038/s41598-022-05288-7).

Upcoming in April 2022:

- EM-DAT 2021 Annual Disasters Report

