



Methodology Note for the Cost of Delay: Why finance to address Loss and Damage must be agreed at COP27

Full datasets and sources are available upon request, please email: teo@lossanddamagecollaboration.org.

Figure 1: Timeline of delay

- When including events in the timeline, we focus on events in developing countries only. Events were chosen which had a peer-reviewed article published to evidence the fact that climate change was involved in exacerbating the event. There were far more events linked to climate change in both developing and developed countries over this period, and we selected only a few of these to illustrate how climate-fuelled events are increasing and where dedicated finance to address Loss and Damage could have been employed.
- Experts were consulted on the details of pushes and pushbacks on Loss and Damage inside the UNFCCC, and official UNFCCC documents and Earth Negotiations Bulletin¹ were used as the basis of evidence for these.
- For CO2 parts per million, NOAA data was used.²
- Data on extreme weather and climate related events was gathered from CRED's EM-DAT database.³ EM-DAT is a global database of natural and technological disasters which contains data on the occurrence and effects of more than 21,000 disasters around the world, from 1900 to present. Data for 'natural disasters' was downloaded in September 2022. The categories for 'biological', 'geophysical' and 'extra-terrestrial' were removed when searching for events that were climate and weather related between 1991 and 2021, as well as sub-categories 'subsidence' and 'rockfall'. Note that the data listed on this timeline is for both developed and developing countries.
- EM-DAT definitions used:
 - Disaster: Situation or event, which overwhelms local capacity, necessitating a request to national or international level for external assistance (definition considered in EM-DAT); An unforeseen and often sudden event that causes great damage, destruction and human suffering.
 - Affected: People requiring immediate assistance during a period of emergency, i.e. requiring basic survival needs such as food, water, shelter, sanitation and immediate medical assistance.
 - Total affected: the sum of the injured, affected and left homeless after a disaster.
 - Total deaths: the sum of deaths and missing.

¹ IISD Earth Negotiations Bulletin. <https://enb.iisd.org/>

² NOAA Global Monitoring Laboratory "Trends in Atmospheric Carbon Dioxide".
https://gml.noaa.gov/webdata/ccgg/trends/co2/co2_annmean_mlo.txt

³ Centre for research on the epidemiology of Disasters – CRED. "EM-DAT: The International Disaster Database"
<https://www.emdat.be/>



Figure 2: Discourses of delay

- The four discourses of delay on Loss and Damage finance, are adapted from the typology included in the paper ‘Discourses of climate delay’ by Lamb et al. (2020).⁴ These discourses were identified as ways to delay climate action more broadly and have been adapted to align with typical excuses used by developing countries to delay progress on finance for Loss and Damage. Evidence for these excuses was sourced from the Glasgow Dialogues, which took place in June 2021.

Figure 3: Number of climate and weather-related events in developing countries, 1991 - 2021

- CRED’s EM-DAT database was used to obtain this data, as outlined for figure 1.
- Countries in the database were sorted into Annex-I and Non-Annex I countries, based on UNFCCC classifications.⁵ Annex-I countries represent ‘developed countries’ and Non-Annex I countries represent ‘developing countries’ in this analysis. According to UN climate change, Annex I Parties include the industrialized countries that were members of the OECD (Organisation for Economic Co-operation and Development) in 1992, plus countries with economies in transition (the EIT Parties), including the Russian Federation, the Baltic States, and several Central and Eastern European States.
- Categories of interest from the database were ‘Total deaths’, ‘Total affected’, as well as the number of events listed.
- To obtain the figure ‘average of 189 million people affected per year’, the mean was used as average. The standard deviation was 120,771,594. The median was 160,159,427 and the data was skewed to the right due to a single large outlier which was the year 2022 where drought in India affected 300,000,000 people.
- To obtain the figure that ‘the number of extreme climate- and weather-related events that developing countries experience has more than doubled since 1991’, we took the three-year mean for 1991-1993 (128) and compared it with the three-year mean for 2019-2021 (284).
- Over the period, we estimate that there were 9,444 extreme weather and climate related events and 853,483 deaths and of these, 6956 events and 676,731 deaths were in developing countries.
- Since 1991, an estimated 6,956 of a total 9,444 extreme-weather and climate-related events took place in developing countries (74%). Of a total 853,483 deaths reported, 676,731 were in developing countries (79%) and of an estimated 6.014 billion people affected over the period, 5.859 billion were in developing countries (97%). Note that summing the total number of people affected across the period results in double counting, as people are likely to have been affected multiple times by different events.

⁴ W.F. Lamb et al. (2020). “Discourses of climate delay”. <https://www.cambridge.org/core/journals/global-sustainability/article/discourses-of-climate-delay/7B11B722E3E3454BB6212378E32985A7>

⁵ United Nations Climate Change “Parties to the United Nations Framework Convention on Climate Change”. <https://unfccc.int/process/parties-non-party-stakeholders/parties-convention-and-observer-states>



Figure 5: Comparing profits of the fossil fuel industry with V20 economic losses due to climate change, between 2000 and 2019

- 2000 to 2019 was chosen as this was the period covered in the V20's report on economic losses linked to climate change.
- The V20's report looked at the 55 countries who are members of the Climate Vulnerable Forum, to demonstrate how on average a fifth of the GDP of our 55 economies has been eliminated. In total, the report estimates that in aggregate dollar terms, over the 2000-2019 period, V20 countries have lost about US\$ 525 billion because of climate change already affecting temperature and precipitation patterns. This value of \$525 billion was taken to then compare to fossil fuel profits.⁶
- For fossil fuel profits, estimates were taken from Verbruggen (2022) for the period 2000-2019.⁷ Here, Fossil fuel profits are defined by the World Bank as "Natural resources give rise to economic rents – revenues above the cost of extracting the resources, because they are not produced. Oil and natural gas rents are the difference between the value of crude oil and natural gas production at regional prices and total costs of production." The calculation uses World Bank data, as it assesses the annual rents from crude oil, natural gas, and other resources.⁸ Numbers are expressed in US dollars in 2020 terms.
- To obtain figures comparing daily fossil fuel super-profits and finance put forward by Governments to address Loss and Damage:
 - We calculated the daily average super-profits of the fossil fuel industry over the period 1991-2020 (data was not available for 2021).
 - All contributions explicitly for finance to address Loss and Damage were converted to USD. The Scottish Government put forward 2 million GBP⁹, the Wallonian Government put forward 1 million euro¹⁰, and the Danish Government put forward roughly 13 million USD¹¹.

⁶ V20 (2022). "Climate Vulnerable Economies Loss Report: Economic losses attributable to climate change in V20 economies over the last two decades (2000–2019)".
https://www.v-20.org/wp-content/uploads/2022/06/Climate-Vulnerable-Economies-Loss-Report_June-14_compressed-1.pdf

⁷ A. Verbruggen (2022). "The geopolitics of trillion US\$ oil & gas rents".
<https://avielverbruggen.be/en/publications/climate-energy-nexus/290-20220721-clime-the-geopolitics-of-trilli-on-us-oil-gas-rents-at/file>

⁸ World Bank Metadata Glossary "Oil rents".
<https://databank.worldbank.org/metadataglossary/adjusted-net-savings/series/NY.GDP.PETR.RT.ZS>

⁹ Scottish Government "Scottish Government at COP26: What was achieved?" (2022).
<https://www.gov.scot/publications/scottish-government-cop26-achieved/pages/15/>

¹⁰ The Brussels Times "COP26: Wallonia earmarks one million euros for loss and damages" (2021).
<https://www.brusselstimes.com/193568/cop26-wallonia-earmarks-one-million-euros-for-loss-and-damages>

¹¹ Ministry of Foreign Affairs of Denmark "Denmark announces new 100 million DKK support to climate adaptation and concrete activities to avert, minimize and address climate-induced loss and damage for the world's poorest" (2022).
<https://via.ritzau.dk/pressemeddelelse/denmark-announces-new-100-million-dkk-support-to-climate-adaptati-on-and-concrete-activities-to-avert-minimize-and-address-climate-induced-loss-and-damage-for-the-worlds-poorest?publisherId=13560888&releaseId=13660205>



Figure 6: A timeline of delay since COP26

- For the monthly totals of events and deaths in developing countries, EM-DAT was used with the same steps applied as for figure 1 and 3.
- For fossil fuel profits, Q1 and Q2 reported profits for six 'oil major' companies were used. Nearly all lists of 'Big Oil' include ExxonMobil, Chevron, Shell, BP, Eni and TotalEnergies. As a result, these were the six companies whose profits were counted.¹²
- For circles along the side, referring to the first 6 months of 2022:
 - EM-DAT was used to account for the number of events, deaths and people affected for each month. Note that the data in this timeline is for both developed and developing countries.
 - Aon's 1H report was used to provide the information on events detailed (for details of economic losses). Here, the sum of all reported economic losses for countries who are not Annex-I countries under the UNFCCC was used. According to Aon, 'Damage estimates are determined based on various public media sources, including news websites, publications from insurance companies, financial institution press releases, and official government agencies. Economic loss totals are separate from any available insured loss estimates. An insured loss is the portion of the economic loss covered by public or private insurance entities. In rare instances, specific events may include modeled loss estimates determined from utilizing Impact Forecasting's suite of catastrophe model products.'¹³

¹² Sure Dividend "The 6 Big Oil Supermajor Stocks Ranked From Best To Worst".

<https://www.suredividend.com/big-oil-supermajors/>. **Q1 profits:** Shell:

<https://www.shell.com/investors/results-and-reporting/quarterly-results/2022/q1-2022.html>; Chevron:

<https://www.chevron.com/newsroom/2022/q2/chevron-announces-1q-2022-results>; Exxon Mobil:

https://corporate.exxonmobil.com/News/Newsroom/News-releases/2022/0429_ExxonMobil-announces-first-quarter-2022-results#:~:text=First%2Dquarter%202022%20Chemical%20earnings,billion%20in%20the%20previous%20quarter; BP:

<https://www.bp.com/en/global/corporate/news-and-insights/press-releases/first-quarter-2022-results.html>;

Eni:

<https://www.eni.com/en-IT/media/press-release/2022/04/eni-first-quarter-2022-ceo-claudio-descalzi-comments-results.html>; Total: https://totalenergies.com/system/files/documents/2022-04/1Q22_Results.pdf For Q2 **Q2 profits:** Shell:

<https://www.shell.com/investors/results-and-reporting/quarterly-results/2022/q2-2022.html> ;

<https://www.reuters.com/business/energy/shell-reports-record-profit-115-billion-2022-07-28/>; Chevron:

[https://www.chevron.com/newsroom/2022/q3/chevron-announces-2q-2022-results#:~:text=San%20Ramon%2C%20Calif.%2C%20July,diluted\)%20in%20second%20quarter%202021](https://www.chevron.com/newsroom/2022/q3/chevron-announces-2q-2022-results#:~:text=San%20Ramon%2C%20Calif.%2C%20July,diluted)%20in%20second%20quarter%202021); Exxon Mobil:

https://corporate.exxonmobil.com/News/Newsroom/News-releases/2022/0729_ExxonMobil-announces-second-quarter-2022-results; BP:

<https://www.bp.com/en/global/corporate/investors/results-and-presentations/quarterly-results-and-webcast.html>; Eni:

<https://www.eni.com/assets/documents/press-release/migrated/2022-en/07/eni-second-quarter-2022-ceo-claudio-descalzi-comments-results.pdf>; Total:

https://totalenergies.com/system/files/documents/2022-07/2Q22_Results.pdf.

¹³ Aon (2022) "Global Catastrophe Recap: 1H 2022".

<https://www.aon.com/reinsurance/thoughtleadership/default/global-catastrophe-recap-1h-2022>