

# WATER INSECURITY AND CLIMATE RISK: INVESTMENT IMPACT OF FLOODS AND DROUGHTS

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## Main Finding: Damages caused by global warming related extreme weather events can be linked to corporate emissions

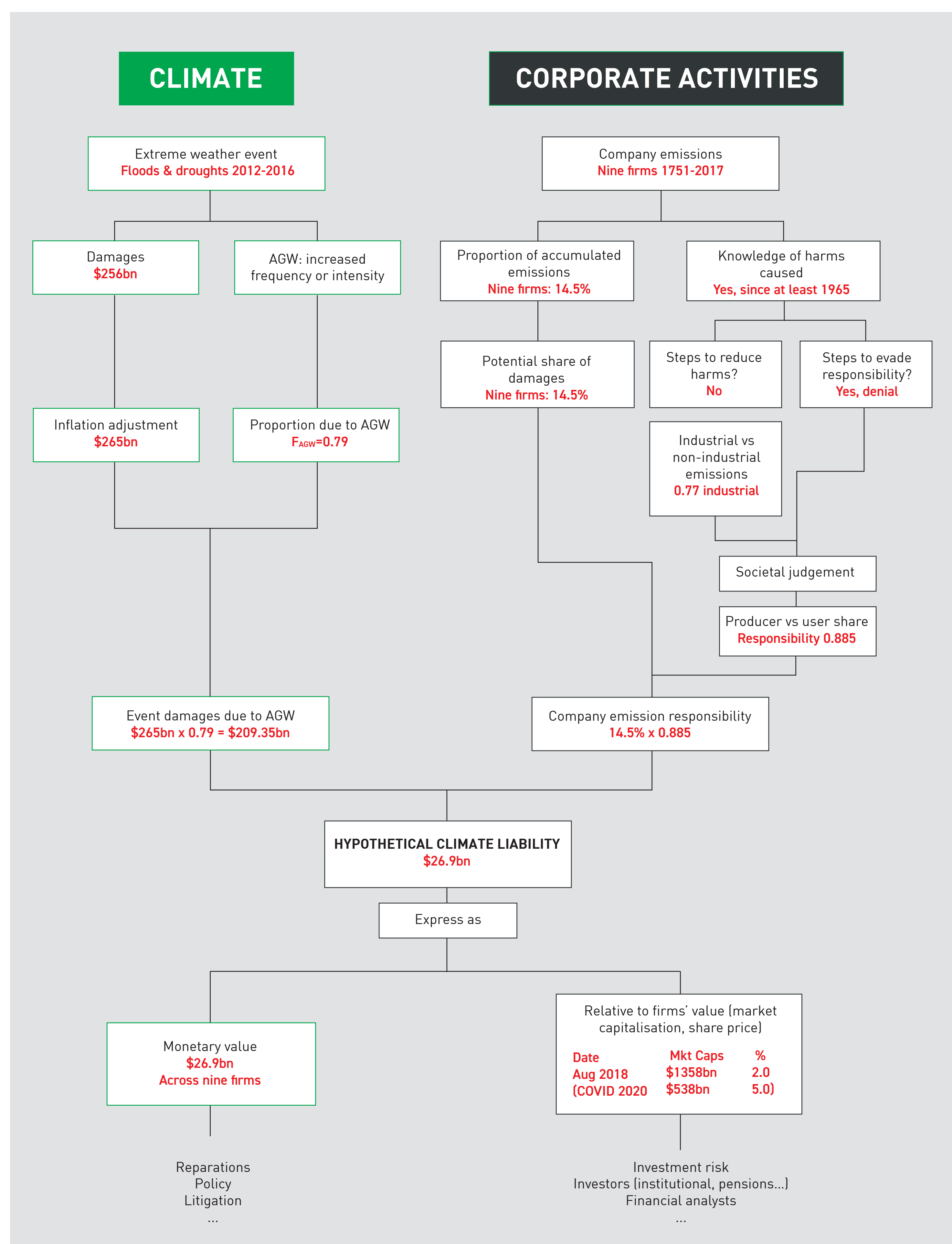
Investors should be concerned about climate risks. Potential liabilities for extreme flood and drought events linked to global warming may not be reflected in the share prices of high-emitting companies. Should high-emitting firms be held (at least partially) to account?

### Hypothetical climate liability regime

Presenting impacts from extreme weather events in terms of emitting companies' values makes it easier to appreciate how climate damages relate to the share prices of emitters. This provides context for investors considering climate related risks as well as for corporate policy decisions.



<https://www.dw.com/en/german-flood-victims-left-traumatized-as-climate-crisis-looms/a-59111396>



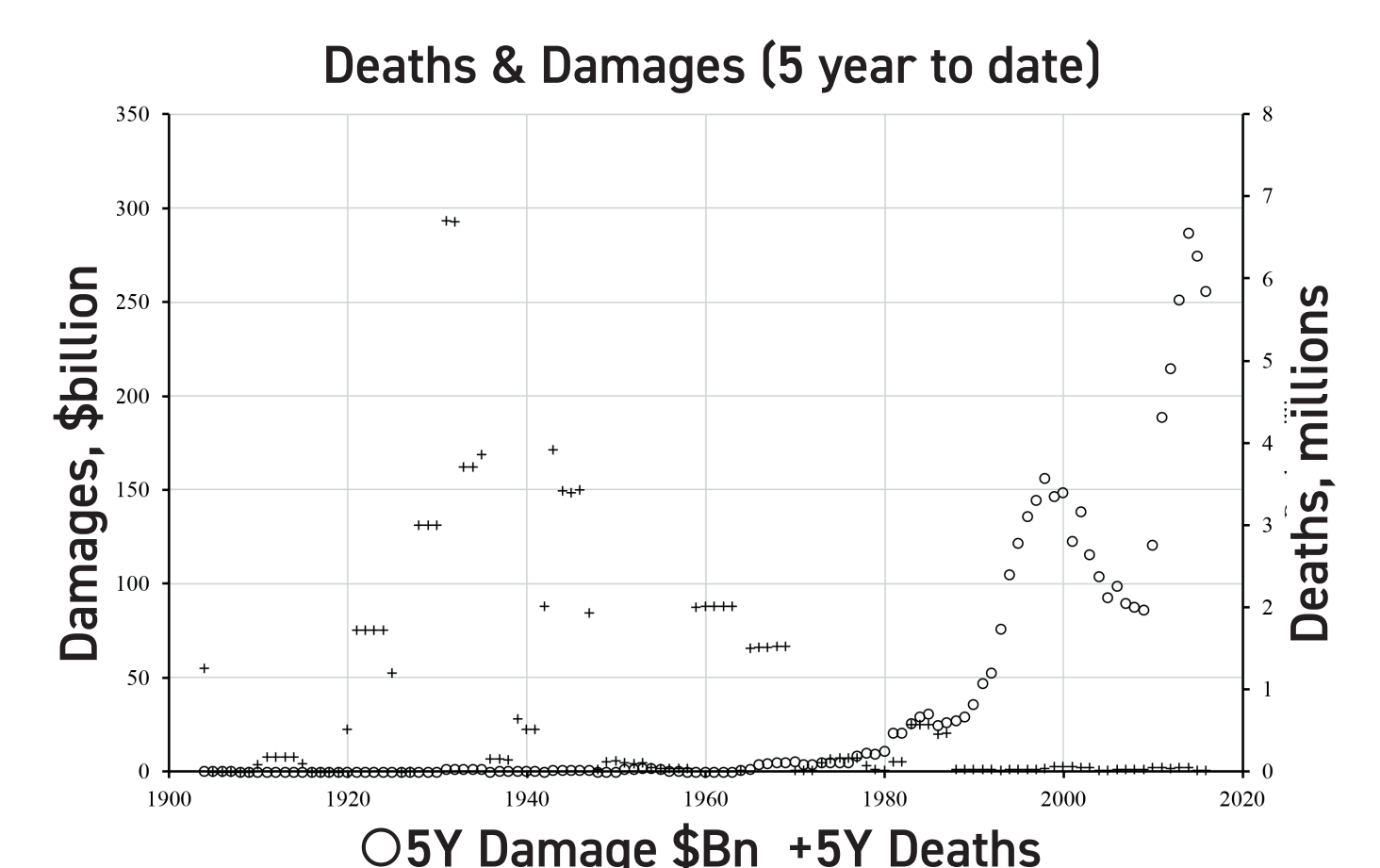
### Extreme weather event attribution

A warmer atmosphere results in an intensified water cycle. Increased floods and more frequent droughts, can both occur. Case studies were used to estimate proportion due to AGW.

- 2017 Hurricane Harvey: event frequency increased at least three-fold.
- 2011 Thailand flooding: highest rainfall in the 61-year record.
- 2015-2017 South Africa, worst drought since 1904. Over 3x more likely.

### Damages associated with floods and droughts

2012-2016: \$256bn damages globally  
1985-1989: \$29bn damages globally  
(Data from EM-DAT).



### The emitters

Nine publicly listed firms were responsible for 14.5% scope 1 and 3 emissions between 1751-2017.

Who is responsible? Factors include: industrial versus non-industrial emissions, availability of products, and moral responsibility. Once dangerous climate consequences were known, did suppliers take steps to reduce harms?

### Results

For the nine firms, estimates suggest a hypothetical climate liability equivalent to between 2% and 3% in share price terms for global floods and droughts over 2012-2016.

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