

# Polluter Pays

## for Climate Change Loss and Damage

A report on the KZN flooding of 2022, its links to climate change, and how the law might be used to claim for losses and damages from the world's largest GHG emitters

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“**The most catastrophic natural disaster** yet recorded in KwaZulu-Natal (KZN) in collective terms of lives lost, homes and infrastructure damaged or destroyed and economic impact.”



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# Introduction

On 11 and 12 April 2022, an intense rainfall event and flooding devastated the coastal city of Durban, Kwazulu-Natal and the surrounding region. Scientists have called this “**the most catastrophic natural disaster yet recorded in KwaZulu-Natal (KZN) in collective terms of lives lost, homes and infrastructure damaged or destroyed and economic impact.**”<sup>1</sup>

**T**his disaster was one of many climate change related disasters experienced around the world. It is by now well established that human caused global warming, leading to climate change, exacerbates these extreme weather events as will be highlighted in this report.


It is not surprising - in the face of fatally deficient climate change mitigation efforts globally – that the vital statistics are becoming progressively worse. It has been scientifically confirmed that 2023 was, by a significant margin, the hottest year on record since record-keeping began. The year saw the Earth’s average temperature reaching 1.48°C above pre-industrial levels.<sup>2</sup> Almost half of the days of that year saw temperatures exceed the Paris Agreement’s aspirational target of keeping warming below 1,5°C.

There is much to be done to reverse this trend. Curbing greenhouse gas (GHG) emissions must gain proper traction and accelerate steeply. Nothing short of lowering the GHG load in the atmosphere is going to make a meaningful difference. Reports from the United Nations Intergovernmental Panel on Climate Change (IPCC) consistently tells us that we need to reduce emissions by 43% by 2030.<sup>3</sup> Even with the best **mitigation** efforts seeing the light of day, much global warming is already “baked into the system” and countries, communities and economies are going to have to **adapt** to those impacts which are unavoidable.

And then there is climate **loss and damage** which engages with how to fund and effect repairs to, and compensation for, losses and damages incurred as a result of climate change.

These aspects of climate change response, while simple enough to grasp at a headline level, are confoundingly complex to execute. Vested interests, inadequate governance, compromised political will and the sheer magnitude of the challenges means that humanity has to pull together like never before to navigate this crisis. And then there is the financing required to undertake these measures.

The report further explores the rapidly growing field of climate attribution science, which proves how emissions from particular sources contribute to global warming, allowing for measurable accountability for those sources. Another leg in this field is concerned with the extent to which global warming causes or intensifies severe weather events and climate anomalies.

 The challenge would be immense even if all of society was pulling in the same direction and united behind just and scientifically sound climate change responses. But unfortunately we are not, and many vested interests want to maintain the business-as-usual scenario which will make much of the planet unliveable and destroy the world economy.

Focusing on loss and damage, this advocacy report seeks to add to the vast and growing knowledge base which is joining the dots and seeking solutions for humanity’s greatest challenge.

It does so firstly by looking at the April 2022 event in KZN, both in terms of causes as well as the extent of the immediate and long term impacts. This study informs an understanding of the breadth of potential areas of repair and compensation. It also describes how the local government has been engaging with climate resilience through a range of programmes and interventions.

The report then goes on to examine the role of the world’s largest GHG emitters, sometimes called the ‘**carbon majors**’. It looks at how these global economic giants contribute towards global warming while knowing that their activities are foundational to the crisis. Worse, they have actively denied and hidden this knowledge, and have actively hampered global and local climate change response initiatives. While both the South African state, and a number of South African emitters unquestionably shoulder a fair share of responsibility for climate harm, the largest emitters all originate in the developed world, or Global North. Holding them accountable goes some way towards addressing global **climate justice**, which seeks to hold those most responsible for the crisis accountable, and enable protection for those most vulnerable, generally the developing world, or Global South.

Furthermore, attribution science links the extent of the impacts to climate change aggravated events. This ground-breaking work by the scientific and broader academic community starts to answer questions of how to prove **causation** when contemplating legal or advocacy actions, as well as **quantifying** damages that may be the subject of claims for repair and compensation.

Finally, the report explores how the law in South Africa, a country particularly vulnerable to climate change, could potentially be used to institute claims against these emitters. In other words, how we could get the money from where it is, to where it needs to be.

While it is sincerely hoped that emitters, and their political enablers, will find in themselves a moral and ethical imperative to start doing the right thing, history has so far shown that this does not seem likely to happen in the near term without pressure. We trust that the knowledge imparted in this report will add to the development of a legal framework to create enforceable obligations, and empower the climate justice movement, wherever it may be found.



## What is climate change?

The term *climate change* refers to the excessive release of GHGs - mainly carbon dioxide ("CO<sub>2</sub>"), methane ("CH<sub>4</sub>") and nitrous oxide ("N<sub>2</sub>O") - as a result of human activities. The combustions of fossil fuels (coal, oil and gas) accounts for the vast majority of these emissions.



Energy and electricity generation, industrial activities, transport and agriculture are among the main drivers of the combustion and resulting emissions. A much smaller, but not insignificant, proportion of the emissions comes from land use change and deforestation, where the carbon naturally stored in soil and vegetation is released when ecosystems are disturbed or destroyed.

These emissions cause the GHG levels, or load, in the atmosphere to increase above the natural background level. The planet is heated by radiation from the sun. This heat is then re-radiated outwards again. Without human intervention, the GHG levels are perfect to maintain a global average temperature that is conducive to life as we know it. But because of excess human caused emissions, additional heat is trapped, and the global average temperature is driven upwards.

This is known as global warming, and this warming disrupts the planet's climatic systems, causing climate change and affecting winds, rainfall, water currents and more. These disruptions in turn can lead to extreme weather events like heatwaves, excessive rainfall and increased storm severity, as well as droughts. The warmer conditions also cause ice to melt, leading to sea level rise.

The global average temperature is now between 1.1° and 1.2°C warmer than pre-industrial levels (1850 to 1900). Incidentally, this is also when fossil fuels started being burned at scale.

## What is climate justice?

The impacts of climate change do not affect all equally.

The poor are impacted more than the rich, at individual and nation level. It impacts on women more than men<sup>4</sup>, and on the young more than the old. Future generations are likely to be the hardest hit. Adding to the injustice is the near universal trend that those – again at individual and nation level - that least caused or added to the crisis, are the hardest hit.

Climate Justice is an approach or lens that seeks to address this injustice, and ensure that understanding and responding to climate change happens in such a way that these inequities are reduced and eliminated, rather than exacerbated.

### SOUTH AFRICA'S JUST TRANSITION FRAMEWORK<sup>5</sup> HIGHLIGHTS THE NEED FOR:



**Procedural Justice**  
Ensuring that all voices are at the table and heard.



**Distributive Justice**  
Ensuring that both the benefits and costs of climate change and its responses are equally shared.



**Restorative Justice**  
Ensuring that historical damages to people, communities and the environment are addressed, rectified and ameliorated.



## Loss and Damage

The term Loss and Damage, or L&D, has become increasingly associated with the destructive impacts of climate change.

Contributing to this popularisation is the focus on L&D at the United Nations Framework Convention on Climate Change (UNFCCC), the oversight body for the Paris Agreement and host of the annual COP meetings. Developing and at-risk nations have been fighting for well over a decade for the establishment of an L&D fund to compensate and support nations experiencing disastrous climate change impacts.

The process has limped along, but a fund was finally operationalised at COP 28 in 2023 and attracted initial pledges of just under USD700mn<sup>6</sup>. This is however a drop

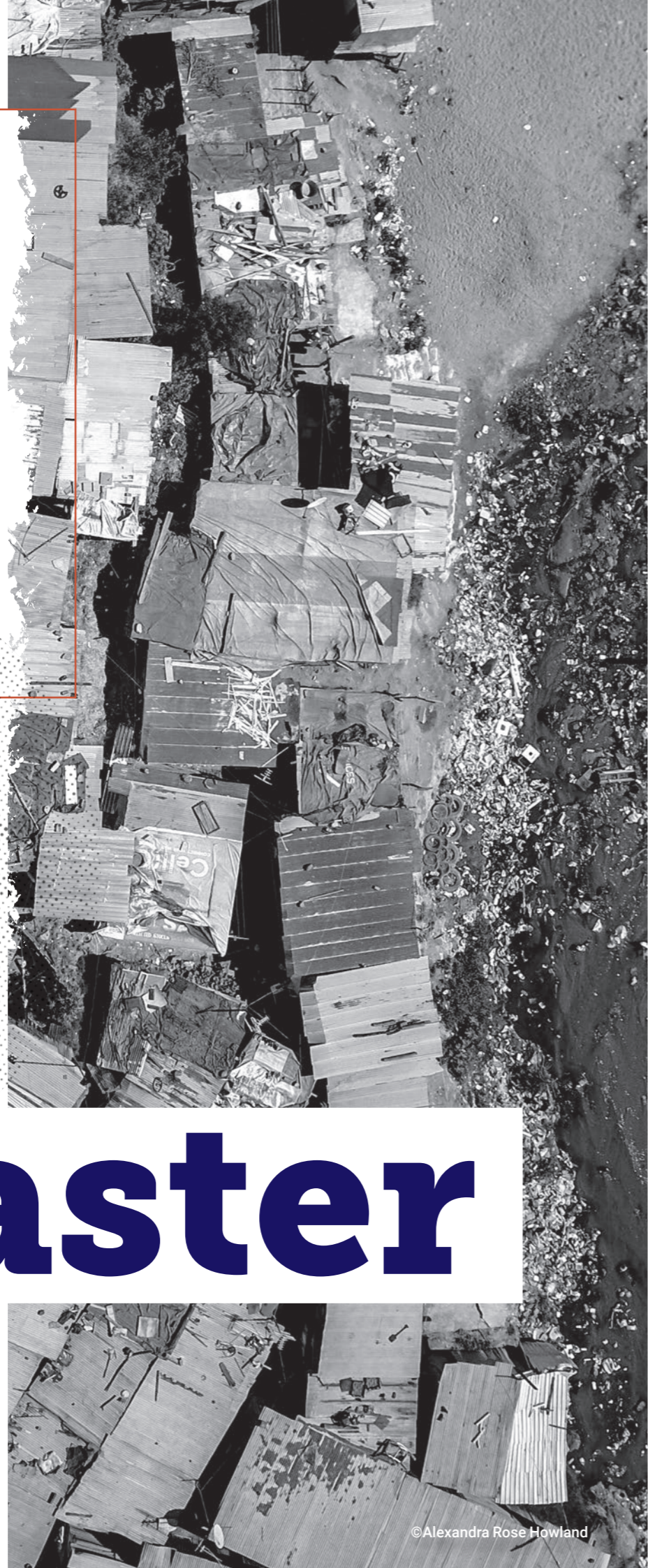
in the ocean, and estimated annual needs for such a fund are USD300bn by 2030.<sup>7</sup> Many questions remain including whether the fund will become adequately resourced, and what the rules for disbursements will be.

In terms of L&D as discussed in this report, the term refers simply to harms, losses and damages suffered by parties as a result of human caused climate change.



SECTION

# Anatomy of a disaster



## THE EVENT Extreme rainfall

On 11 and 12 April 2022, the eastern coast of South Africa experienced in excess of 300mm of rainfall – about one third of the mean annual rainfall for the area – in a period of less than 24 hours.<sup>8</sup> The intense rainfall was caused by a weather system known as a cut-off low, which is defined as a low-pressure system which is isolated from the prevailing westerly winds that usually drive them.<sup>9</sup>

The KZN coastline is no stranger to this phenomenon, well known to usher in severe weather, intense rainfall and resulting flooding. Cut-off lows are generally experienced between March and May, and about 20% of them are associated with intense rainfall.<sup>10</sup> These systems have been found to be responsible for a number of extreme rainfall events in the country over the decades, including in locations such as East London, Gqeberha and Laingsburg.<sup>11</sup> In this case, the effects of the cut-off low were amplified by low winds with a high moisture content, originating in the Southern Indian Ocean.



## THE EVENT Flooding

Flooding must be considered as an event separate from extreme rainfall, as much as they are interrelated. Not all extreme rainfall will give rise to flooding, and ground water saturation, the condition of waterways and human interventions such as the urban environment – paving and roads, stormwater drainage and buildings - all play a role in whether high rainfall will give rise to flooding.<sup>12</sup> Due to high rainfall during the preceding two years the water table levels were high and the ground already largely saturated with water.

Additional factors aggravating the event include conditions of poverty, inequality, informality, poor service provision, poor waste management which impacts on the functioning of stormwater systems, high loading of alien vegetation in riverine systems, poor land use management and planning, and building within wetlands and flood lines and on flood plains.<sup>13</sup> Durban being a city facing many of these conditions and dynamics, makes it very likely that these factors will have contributed to the nature of the flooding.

In general, global warming is expected to lead to higher flooding risk in many parts of the world, including Durban and the KZN coast north and south of the city.<sup>14 15</sup>



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## Global warming's contribution to the event

On heavy precipitation and climate change generally, the IPCC in its Sixth Assessment Report finds that the frequency and intensity of heavy precipitation events have likely increased at the global scale over a majority of land regions. It also notes that increases in the frequency and/or intensity of heavy precipitation have been observed in Eastern-Southern Africa. It goes on to find that human influence, in particular GHG emissions, is likely the main driver of the observed global-scale intensification of heavy precipitation over land regions. Heavy precipitation will generally become more frequent and more intense with additional global warming.<sup>16</sup>

### IPCC

The United Nations Intergovernmental Panel on Climate Change (IPCC) is an organisation formed by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP) in 1988 to provide governments with scientific information that they can use to develop climate policies.

The IPCC works by assessing published literature. The authors producing the reports are leading scientists who volunteer and are currently grouped under three working groups, namely, the Physical Science Basis (Working Group 1); Impacts, Adaptation and Vulnerability (Working Group 2); and Mitigation of Climate Change (Working Group 3).

The IPCC creates regular comprehensive assessment reports about knowledge on climate change, its causes, potential impacts and response options.<sup>17</sup> To convey an idea of the scope and magnitude, the report by Working Group 2 for the Sixth Assessment Report (launched in 2022) had 270 authors, and 575 contributing authors. It reported on 34 000 scientific papers and attracted 62 000 review comments from the scientific community around the world.<sup>18</sup>

Due to the rigorous process and extensive scope, these reports can be deemed to meet the standard of "best available science." If anything, they are thought of in some circles as being conservative, due to the need for deep consensus on findings published, and the requirement that member states need to sign off on wording<sup>19</sup> creating the possibility of political pressure.

## Event attribution in the KZN floods

World Weather Attribution (WWA)<sup>20</sup> is a collaboration of a multi-national collective of climate scientists that performs rapid studies on extreme weather events to determine the extent to which these events have been intensified by global warming. The collective started the work in its current form in 2015, although this type of attribution study first became visible in 2004.<sup>21</sup> To date the collaboration has performed over 50 event studies and is highly regarded as a definitive and credible source of event attribution knowledge. The climate change focussed website, Carbon Brief<sup>22</sup>, maintains and analyses a live database<sup>23</sup> of all known attribution studies around the world. As at August 2022, of the 504 events that were studied, 71% of them were found to have been intensified by global warming. Of the 127 flooding and rainfall events recorded by that time, 56% were found to have been intensified or made more likely to happen as a result of human caused climate change, and 9% lacked sufficient data to make a finding.

**127** flooding and rainfall events recorded

**56%**

intensified or made more likely as a result of **human caused climate change**

# ATTRIBUTION

# SCIENCE

"the branch of science which seeks to isolate the effect of **human influence on the climate** and related earth systems"

## CLIMATE CHANGE ATTRIBUTION

Seeks to identify the **causes of climate change at a global or regional level**, primarily by understanding how human activity is driving climate change.

## SOURCE ATTRIBUTION

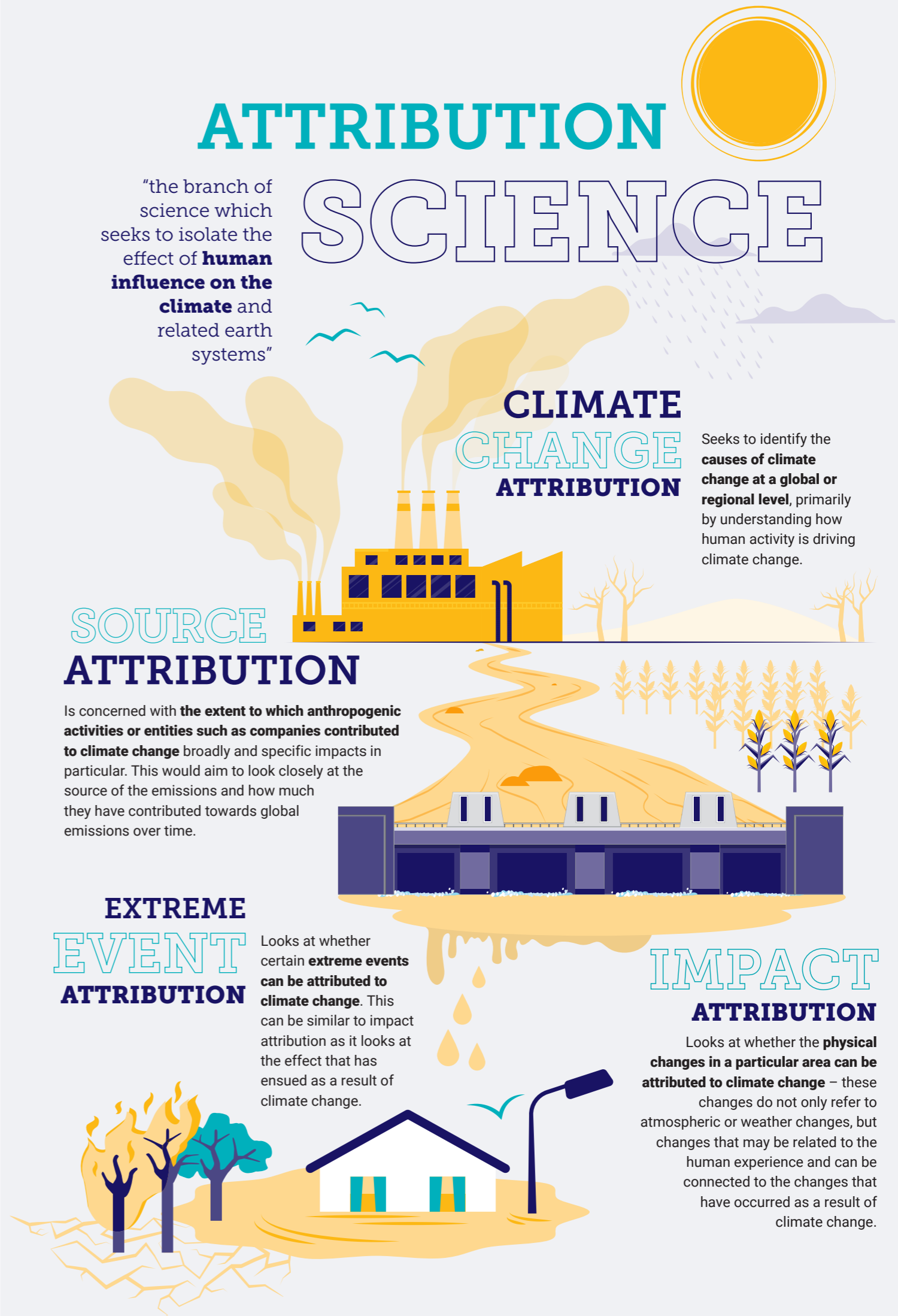
Is concerned with **the extent to which anthropogenic activities or entities such as companies contributed to climate change** broadly and specific impacts in particular. This would aim to look closely at the source of the emissions and how much they have contributed towards global emissions over time.

## EXTREME EVENT ATTRIBUTION

Looks at whether certain **extreme events can be attributed to climate change**. This can be similar to impact attribution as it looks at the effect that has ensued as a result of climate change.

## IMPACT ATTRIBUTION

Looks at whether the **physical changes in a particular area can be attributed to climate change** – these changes do not only refer to atmospheric or weather changes, but changes that may be related to the human experience and can be connected to the changes that have occurred as a result of climate change.



## Methods used to study event attribution

WWA, like many climate scientists, use sophisticated computer modelling, used with extensive observed weather data, to simulate weather and climate patterns, and have the ability to change inputs to simulate different conditions.

At the outset of this type of modelling, scientists simulated the modern climate, as warmed by GHG emissions. They were then able to model a theoretical climate without excess human caused GHG emissions. By counting the number of extreme weather events in each version, they were able to deduce what the role of climate change was in each event.

## The attribution study of the extreme rainfall event in KZN

Using sophisticated modelling and peer reviewed methodologies, WWA were able to make findings on both the degree of global warming caused intensification of the event, as well as the likelihood of it happening. This modelling is well-described in the study released by the collaboration a few weeks after the event.<sup>25</sup> In addition, the study discussed contributing factors which lead to the loss and damage, including the state of infrastructure, apartheid legacy spatial planning, informal settlement, ecosystem adaptation, land use and management and governance, and concludes that:

"Many factors - natural and man-made - contributed to the high death toll and damage that resulted from the 2022 Durban floods. Historical injustices that continue to affect spatial planning, governance challenges, older infrastructure, a lack of clear early warning as well as other factors that could not be fully captured in this rapid analysis, compounded upon one another to create the disaster. . . . If cities continue to develop in ways that concentrate the poorest and most marginalised people in flood prone, high risk areas, they will continue to be most affected when disaster's strike. While rainfall during this event was extreme, this type of event is not unprecedented and is likely to happen again and with even greater intensity in the future. . . ." <sup>26</sup>

More recently, the method has been enhanced by covering more observed data from past and present. The modelling is then undertaken with the inputting of a particular starting date, and the effects of slowly rising emissions are able to be observed, allowing trends to be detected. This now allows scientists to pronounce on the extent to which excess emission have influenced the severity of an event, as well as its likelihood of occurring.<sup>24</sup> WWA aims to produce results on very short turnaround times, called rapid attribution studies.

### In terms of attributing the impacts of the event to human caused climate change, the main findings include that:

- early warnings issued by the South African Weather Service and eThekweni municipality had limited reach and that the people who did receive early warnings may not have known what to do based on them;
- the floods, on an initial view, disproportionately affected marginalised communities, with particular devastation in informal settlements;
- heavy rainfall events are projected to increase in frequency and magnitude in the future with additional global warming levels;
- GHG emissions are (at least in part) responsible for the observed increases;
- the defined event has a return time of about **20 years in today's climate – that is it is expected to occur every 20 years on average. This compared with a return time of every 40 years in a 1.2°C cooler world;**
- the **probability of an event such as the rainfall that resulted in this disaster has approximately doubled** due to human-induced climate change; and
- the intensity of the current event **has increased by 4-8%.**

The last three findings above are particularly important when considering the extent to which accountability, based on GHG emissions, could be apportioned to emitters for damages and losses caused.

The results show that the rainfall and flooding in this case is not intensified by climate change to an exceptionally high degree, or to put it another way, the event does not have an exceptionally strong climate change signal. Nonetheless, 8% of the claimed R17 billion value of resulting economic losses amounts to R1,36 billion, still a significant amount. In addition, the halved return time and doubled likelihood of the event would also be likely to be factored into any apportionment exercise.

As an interesting comparison, WWA also modelled the "Day Zero" drought experienced in Cape Town and surrounds from 2015 to 2017, and found that the **likelihood of such an event had increased by a factor of three.**<sup>27</sup>

## The Impacts of the Flooding

The deadly flooding caused a wide range of immediate and long-term impacts that killed people and devastated lives and livelihoods, as well as the natural and urban landscape in ways that are still visible today. In her report<sup>28</sup> on the impacts of the 2022 KZN flood, Professor Catherine Sutherland of the School of Built Environment and Development Studies at the University of KwaZulu-Natal describes the impacts:

"The immediate or short term impacts of the flood included loss of life, destruction of housing and water and sanitation services, the reduction or complete loss of mobility, loss of income and ability to go to work, the economic impacts on industry and business....., social displacement and trauma, pollution of rivers, the coastline and the ocean (flood debris, solid waste and plastic pollution and sewerage pollution), health impacts due to pollution, mudslides and standing water, and disruption to schooling and basic health care access, loss of social security documents, food insecurity, gender-based, alcohol and narcotics related violence, and disruption of municipal governance and urban life. While some of these impacts improved over time, and were remediated, many remained, with additional long term and cumulative impacts emerging."<sup>29</sup>

As is so often the case, at-risk communities living in informal settlements experience the impacts most acutely. Many of these settlements are close to rivers, below flood lines or situated on steep hillsides with little or no infrastructure to protect them from the elements.<sup>30</sup>

Durban and surrounds suffered immense economic losses. It has been estimated that the costs of repair for infrastructure such as roads, transportation, water treatment and supply, communication, and electrical systems exceed R10bn. Various sectors in the formal economy also suffered major losses. These include manufacturing (R431m), agriculture (R12.6m), construction (R18m), wholesale and retail (R46m), and warehousing and logistics (R33m). In total, the KZN government estimated economic losses in the province amounting, overall, to about R17bn.<sup>32</sup>

These amounts do not obviously reflect the economic losses to hundreds of thousands poor and economically at risk people and informal enterprises whose lives were upended in a myriad of ways. Nor do they include the more difficult-to-quantify costs and effects of trauma, disrupted schooling and destruction of social structures.



**DURBAN Resilience and vulnerability**

Climate change intensified events of course occur in the context of pre-existing conditions, both positive and negative. Durban has a history of colonialism and apartheid, and coupled with post-democracy management and governance challenges, has much to deal with. There are high levels of poverty and inequality, significant housing and service delivery backlogs, including water, sanitation and electricity. These challenges are further exacerbated by rapid urbanisation, neo-liberalism, poverty, inequality, migration, resource and capacity challenges. And of course climate change.<sup>33</sup>

On the other hand, the city is also known for its focus on resilience and sustainability, and has a demonstrated history of working towards development that is both socially and ecologically sound. It engages with water and sanitation innovation, informal settlement upgrading and community ecosystem based adaptation (CEBA). Devised and implemented to address climate resilience and create jobs, CEBA is an approach that focusses on the restoration and protection of Durban's ecosystem services. These include water and soil provision, flood attenuation, catchment management and other measures that enhance ecological infrastructure to support built infrastructure. In 2017, the World Bank estimated that the natural and semi-natural systems of the eThekweni Municipal Area supply ecosystem services worth at least R 4.2bn per annum with the value of these systems estimated to be between R 48bn and R 62bn.

Starting in 2013 the city, along with many other stakeholders, started investing in the rehabilitation of rivers and catchments in order to address the challenges of pollution, water security risk, health impacts of degraded environments, poor service provision and increased environmental risk and flooding events.

This led to the development of various catchment rehabilitation projects. In 2021 Durban's Transformative Riverine Management Programme (TRMP) was launched to protect and enhance ecological infrastructure, protect the city from flooding and improve safety and quality of life of people who live alongside rivers and streams. The TRMP business case has shown that for every R1 spent on catchment rehabilitation R1.80 to R3.40 will be obtained in municipal and societal benefits, over 9000 jobs will be created and there will be R12bn to R14bn in societal benefits.<sup>34</sup>

Another climate resilience project, the Community Based Flood Early Warning System (CBFEWS) was established in 2015. The CBFEWS includes officials from eThekweni Municipality, researchers from University of KwaZulu-Natal and civil society organisations and community members from both formal and informal settlements within the Palmiet catchment. The system uses information from the South African Weather Service, the municipal Flood Early Warning System FEWS system and radar, and from real time community data, using whatsapp groups to communicate flood warnings across the catchment, but most particularly to the highly vulnerable Quarry Road West informal settlement community. The system is estimated to have saved the lives of between 250 and 400 people in the Quarry Road West informal settlement during the flood.

**QUARRY ROAD WEST INFORMAL SETTLEMENT COMMUNICATION PLAN**



It can be seen that eThekweni had, and still has, a range of pre-existing vulnerabilities and conditions that contributed to the nature and extent of the impacts from the event. However, a number of well-established climate change response initiatives were also in place, and were able to ameliorate some the effects of the flooding. Understanding these can help point to areas which could be strengthened if appropriate compensation was made available by those responsible for creating or adding to the harmful conditions.







# SECTION 2



# Remedies and Reparations

What could these look like?

Section 3 of this report considers the remedies that are potentially available for climate loss and damage claims in South African law as it currently stands.

It is however a worthwhile exercise to briefly explore a broader view of what redress and reparations for the flooding could look like, both within and beyond what may currently be thought to be available in a strictly legal sense. Firstly, the law develops constantly as new human activities and knowledge emerge, and as collective values evolve. Secondly, a lot of change is brought about through advocacy and other forms of pressure, and thinking creatively about harm and reparations can inform and shape future demands for accountability.

In terms of **backward-looking compensation** for what has already occurred, we can think about redress for:

- losses of public infrastructure, both built and ecological;
- loss of homes, goods and community infrastructure in both formal and informal settings;
- loss of access to services, including healthcare, education and sanitation;
- damage to food production resources, including small scale farming;
- physical and mental health impacts, including individual and collective trauma;
- loss of access to transport and the ability to be economically active;
- losses to businesses, formal and informal;
- loss of a sense of place, social cohesion, stability;
- loss of tangible and intangible heritage; and
- environmental harm beyond obvious and quantifiable ecosystem services.

Some of these items reflect the growing exploration of non-economic loss and damage – that which cannot simply be replaced via monetary compensation.

It is essential to ensure that the pursuit of redress is informed by the principle of climate justice. Poor people and communities do not have access to many of the resources required to rebuild their lives, and appropriate forms of compensation and how these are applied must be prioritised.

Then we can consider **forward-looking contributions of resources to climate resilience and future costs of adaptation**. This is an area where the law is in need of development in a climate change context. It is arguably both reasonable and just to demand that responsible parties contribute to elements which could include:

- climate resilient upgrading of informal settlements;
- climate resilient upgrading of formal infrastructure and public assets;
- enhancing and replicating interventions such as the community ecologically based adaptation measures described above;
- enhancing and replicating the community based flood early warning system and other inclusive disaster response measures;
- creating green jobs and green economy initiatives that address unemployment and poverty while increasing economic climate resilience;
- strengthening environmental conditions and ecosystem services;
- creating support mechanisms to alleviate and prevent trauma and mental health impacts of climate change;
- creating and maintaining participatory structures, such as climate assemblies, where stakeholders from across the board can consultatively engage with adaptation and climate resilience needs; and
- creating interventions and approaches to ushering in just transition initiatives, ensuring that at risk people and enterprises are not unfairly impacted by the broader societal need to decarbonise.

It is essential that any such measures are consultative and truly participatory. Too often climate adaptation (along with other supposed social upliftment activities) is imposed in a top down manner by the state, business or formal civil society, and the voices and knowledge of those who are at-risk need to be instrumental.

The question then emerges: **who, exactly, must pay for all of this?**

## The Polluter Pays principle

The polluter pays principle is an environmental law concept that requires any person or entity that causes pollution to be responsible for the costs of managing such pollution in order to prevent or repair harm caused.

This principle was first introduced in 1972 by the Organization for Economic Cooperation and Development (OECD), and it is recognised internationally as a way of promoting environmental protection and sustainable development. In 1992, it was adopted as Principle 16 of the Rio Declaration on Environment and Development. South African is a signatory to the Rio Declaration, and it therefore follows its principles, including polluter pays.

The National Environmental Management Act 107 of 1999 (NEMA) also adopted the principle in section 2(4)(p) which states that:

“The costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment.”

## Who are the polluters that should pay?

The pressure to understand sources of human caused GHG emissions arguably began in earnest in the early 1990s when the seriousness of the climate crisis started appearing properly on the global political agenda. The IPCC released its first assessment report in 1990 and the Kyoto Protocol<sup>36</sup> was signed in 1997 and came into force in 2005. Setting binding emission reduction targets for 37 industrialised nations paved the way for enhanced GHG emissions monitoring and reporting. In the past decade many nations, including South Africa, have now prescribed mandatory GHG emission reporting.

The scientific community is able to measure concentrations of GHGs in the atmosphere (top down measurement). At source level, GHG emissions can be calculated (bottom up reporting). This is done by measuring production quantities and multiplying them by an emissions factor to obtain a total value of GHG emissions for a specific period of time.



Legal, social and economic systems are still in the early stages of applying the principle to GHG emissions pollution, resulting in the costs of these emissions - sometimes called the Social Costs of Carbon<sup>35</sup> - to be 'externalised', or borne by society-at-large.

Carbon taxing is one way in which there is an attempt to apply the principle, but in South Africa, as in much of the world, the taxes are often only a fraction of the true costs of the harm caused by the emissions and resulting climate change.

As a simplified example: The operator of a gas-fired power plant will know how many megawatts of power are being generated over a specific time period. Emissions factors are calculated globally and set for specific types of fuels and processes. The plant operator, or an independent verifier, will multiply the amount of megawatts generated by the emissions factor and be able to report a total amount of GHG emissions for the period.

We therefore know what and where the sources of GHG emissions are, whether it is by activity, country or enterprise. We can get a reasonably accurate picture of current emissions from sources, with an approximately 2-year lag time to account for reporting processes, and can also calculate the historical or cumulative emissions.

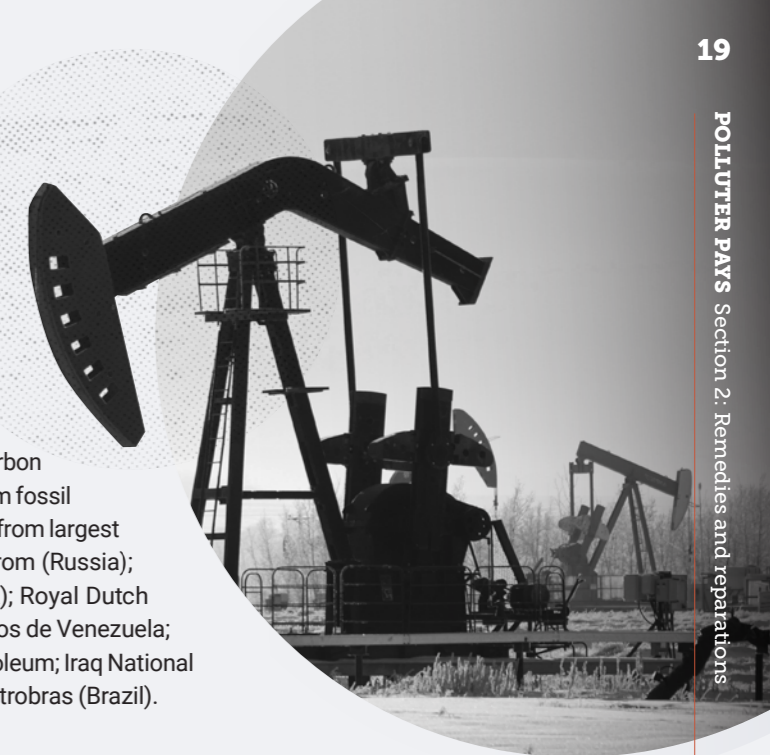
We can also use **climate change attribution science**<sup>37</sup> to ascertain what effect these emissions have on the climate system. While these fields are not without challenges when it comes to collecting litigation-ready evidence, the science is already being used in court cases around the world, as well as in other exercises related to determining accountability for climate harms.<sup>38</sup>



## The Carbon Majors

In 2014, scientist Richard Heede, founder of the Climate Accountability Institute (CAI), authored a report of a ground-breaking project researching the cumulative carbon dioxide and methane emissions of the so-called carbon majors.<sup>39</sup> These are the private and state owned entities responsible for, at the time of publication, 63% of CO<sub>2</sub> and methane emissions from 1854 to 2010. 83 of the carbon majors are fossil fuel producing entities, and 7 are cement manufacturers.

Updated research by CAI published in 2020<sup>40</sup> showed that the top 20 carbon majors were responsible for 35% of emissions of CO<sub>2</sub> and methane from fossil fuel and cement production between 1965 and 2018. These emitters (from largest to smallest) are listed as being: Saudi Aramco (Saudi Arabia); Gazprom (Russia); Chevron (USA); ExxonMobil (USA); National Iranian Oil Co; BP (UK); Royal Dutch Shell (Netherlands); Coal India; Pemex (Mexico); PetroChina; Petroleos de Venezuela; Peabody Energy (USA); ConocoPhillips (USA); Abu Dhabi; Kuwait Petroleum; Iraq National Oil Co; Total SA (France); Sonatrach (Algeria); BHP (Australia) and Petrobras (Brazil).



## The Fossil Fuel Industry

It is clear from which sector the bulk of emissions ultimately come from. An initial wave of climate change lawsuits against fossil fuel producers in the mid 2000s, mainly in the USA, were generally not successful. That said, the work put into litigation in a developing field is mostly ultimately constructive as evidence resources are built, experts are sourced and legal arguments are expanded and refined.

There was a lull in cases brought, until the carbon majors report described above was released.<sup>41</sup> This knowledge, along with the rapid development of attribution science, were among the factors which saw a resurgence of legal action of this type, and there are currently around 60 cases filed against carbon majors<sup>42</sup>

**These cases generally fall into one or more of 5 categories:**



**Retrospective, polluter-pays cases**, seeking damages and other remedies for past losses.



**Prospective cases** to limit future emissions.



**A combination approach**, seeking retrospective and prospective remedies.



**Climate disinformation and misrepresentation cases**, seeking to hold polluters liable for misrepresentations and even fraud over their disclosure of emissions and the dangers of climate change.



**Directors' liability cases**, seeking to hold individual company directors personally liable for their actions or omissions in response to climate change.

The cases centred on disinformation and misrepresentation are particularly startling regarding the extent of deception undertaken by many large fossil fuel producers. Volumes of evidence are coming to light, showing how the companies knew about, and actively hid, the climate harms of their activities, in one case going back to 1959. The 1970s and 1980s saw concerted efforts to keep this information hidden from the public eye.<sup>43</sup> This deception does not accord with their version that they were the innocent vendors of products that they were believed were safe. The parallels with the multi-decade advocacy and legal challenges against 'big tobacco' bear mentioning.<sup>44</sup>

More recently cases have been launched challenging the false advertising and 'greenwashing' by the companies claiming to be transforming and decarbonising when in fact they are doing the opposite by expanding their exploration and extraction activities.<sup>45</sup> Africa is being particularly aggressively targeted by the carbon majors and other producers from the Global North.<sup>46</sup>

Heede, along with Professor Marco Grasso, released a must-read paper<sup>47</sup> in 2023 which makes the case for reparations claims against the top 20 carbon majors. The research indicates that the cumulative cost of climate damages (based on loss of GDP) for the period 2025 to 2050 is broadly estimated at USD99 *trillion*. The paper posits apportioning this amount equally across: fossil fuel producers; consumers who use the products; and the political authorities who should be taking action and failing to do so. The paper then goes on to apportion the applicable cost to the top 20 carbon majors. As an example, top producer Saudi Aramco, would be liable for reparations costs USD42,7bn per year for each year between 2025 and 2050 if this model were used.

Exactly how this apportionment will look in practice going forward is yet to be seen. But what is very clear is that the calls for climate reparations from carbon majors and fossil fuel companies are only going to become stronger, louder and more well-informed. After all, this industry makes staggering amounts of money – up to USD2.8bn of profits *per day*<sup>48</sup> - while people, communities and governments bear the brunt of the impacts and do not have the resources to recover from the losses and repair the damage.

## SECTION

# Using the law

The potential for a loss and damage claim in South Africa



To support this report, a high-level legal opinion<sup>49</sup> was sought to explore the potential of using South Africa's law of delict (also called tort in many jurisdictions) to institute loss and damages claims against one or more of the carbon majors.

## Discussion of the opinion

There are 60 ongoing or completed cases against carbon majors, worldwide. The majority of these cases have been brought in the United States, where cities and states are seeking compensation for climate-linked damage to public infrastructure.

At present there have not yet been any loss and damage claims brought by African claimants against carbon majors, either in African or foreign courts.

This section explores the possible avenues available to claimants who would seek to bring a claim, under South African law before a South African Court, to claim compensation for climate loss and damage, through the lens of the 2022 KZN floods, for past losses and potentially combined with future remedies.

## Foreign Act of State Doctrine and Principles of State Immunity

It may be difficult to bring a claim against a carbon major owned by a foreign state, as courts may decline to determine a matter which relates to the alleged unlawful conduct of a foreign state.

This section must be read as an exploration of the legal position on loss and damage in South Africa as at the time of this report's publication. This exploration is shared with the aim of raising awareness and developing public understanding of the legal responsibility that different parties bear for the loss and damage caused by climate change. Legal proceedings to be launched in future will be based on a fresh assessment of the law applicable at the time.

It must be noted that there may be other areas of law that could be used to institute claims. Additionally, most of the principles and considerations covered in the opinion could be applied to many significant GHG emitter with a similar profile, including emitters fully based in South Africa.

## Jurisdiction

Jurisdiction refers to the authority of a court to hear and decide a legal dispute between parties and make an order that it can effectively enforce. An individual or a group seeking to bring a claim against a carbon major will only be entitled to do so in a South African court if jurisdiction can be established.

Where a carbon major is located in South Africa, the relevant division of the High Court in the area where the carbon major is based would have full jurisdiction to hear and decide any claims for damages and any related remedies against the carbon major. Although most carbon majors may have locally registered South African subsidiaries, most of them are unlikely to be located in South Africa.

Furthermore, where a foreign carbon major has a South African registered subsidiary, it is important to bear in mind that parent and subsidiary companies are distinct entities, with separate corporate personality, and separate, limited liability. A South African subsidiary would therefore not automatically give a court jurisdiction over its parent company, or vice versa.

## Causes of Action and Choice of Law

### CHOICE OF LAW

In bringing a claim against a foreign carbon major, which did most of its polluting beyond South Africa's borders, a South African court will have to determine whether the substantive issues of law must be decided in terms of South African law or the relevant foreign law.

When dealing with a foreign defendant, our courts have stated that the appropriate starting point is to apply the law of the place where the wrongful act was committed. Therefore, the general rule is that the law applicable where the wrongful act took place will apply, unless there are circumstances that justify a departure from this general rule. There is not yet clarity on when a departure would be justified, however, relevant considerations that have been considered by the courts include: which country has the "most significant relationship" to the wrongful act; the presence of a shared jurisdictional connection between the parties; and whether there are grounds of public policy that warrant applying South African law in preference to the relevant foreign law.

However, leading academics suggest that in cases of uncertainty, the place where the wrongful act was committed, ought to be determined by the "place of damage", where the harms and losses giving rise to the claim were suffered. Therefore, a strong argument can be made that victims of the 2022 KZN floods ought to be allowed to rely on South African law to determine the issue of any claims against foreign carbon majors.

## Standing and Available Procedures

Under our common law, any person who claims that they have suffered harm has a right to bring a claim in a South African Court. A person has this right to bring a case in their own interest, as long as they have a "direct and substantial interest" in what is being asked for from the court. The Constitution now allows more situations for individuals to take a case to court on constitutional matters, including cases of public interest, representative standing, and class actions (where representatives are selected to act for a larger group). A claim may therefore be brought on: an individual basis; on behalf of a larger group (where the resolution of their claims depends on substantially the same questions of law and fact); and through a class action.

Given the scale of climate-linked disasters, and the size of the potential classes of victims, the class action mechanism has its advantages, which includes making justice accessible for a large group of individuals with limited means, whose claims may not be big enough to justify approaching a court on an individual basis.



### CAUSE OF ACTION

Under South African law a claim for damages would be approached through what is known as the law of delict. Other avenues to a claim for damages may be available, including constitutional damages. Such a claim is, however limited to instances where a court finds that a claim under the law of delict is unavailable or inappropriate. The application of constitutional rights and obligations is confined to being within South African borders, with limited application outside of our borders. Therefore, in respect of foreign carbon majors, it is unclear whether the Constitution and by extension constitutional damages would be available to South Africans seeking to bring a claim.

## Parent Company Liability

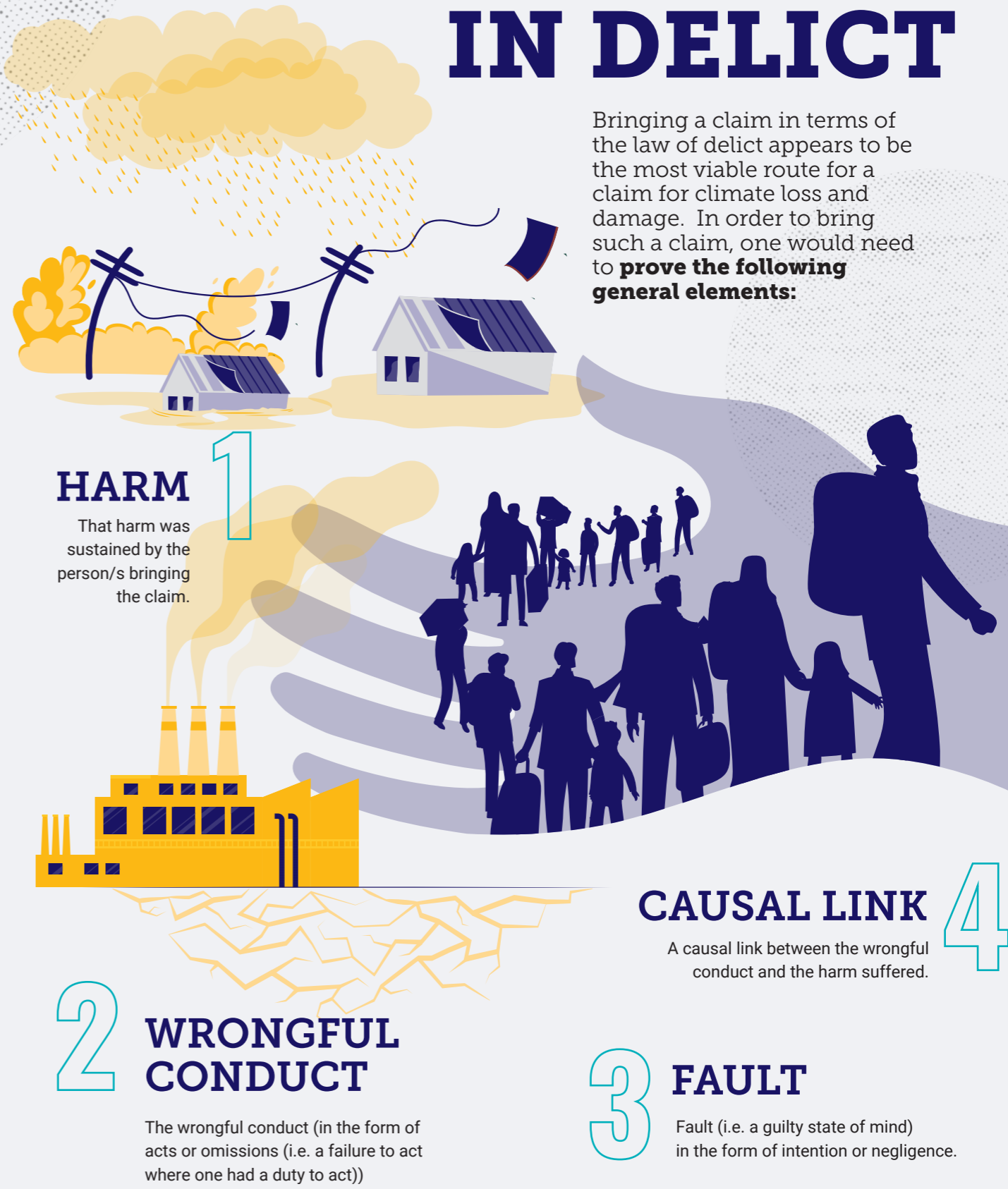
As briefly discussed above, generally a parent company and its subsidiaries are distinct entities, with separate corporate personality, and separate liabilities.

Our courts recognise certain relationships that can lead to vicarious liability, such as employment or similar relationships where there is a similar level of control. Where vicarious liability is proven, one party is held responsible for the actions of another, even if they were not directly at fault. It involves holding one party strictly liable for the negligent actions of another.

The relationship between a parent and a subsidiary could be similar to that of a principal and an independent contractor. The principal is not automatically responsible for the contractor's actions. However, if the principal's negligence played a role in the wrongful conduct taking place, they may be held accountable. Negligence in this circumstance could be in selecting the contractor or not implementing proper safety measures, supervision, and controls.

# LEGAL VIABILITY OF A CLAIM IN DELICT

Bringing a claim in terms of the law of delict appears to be the most viable route for a claim for climate loss and damage. In order to bring such a claim, one would need to **prove the following general elements:**





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## Wrongfulness

A carbon major's liability for loss and damage is dependent on the wrongfulness of its relevant acts and omissions (i.e. a failure to act where it had a legal duty to act).

Wrongfulness involves a legal determination of whether it would be reasonable to impose liability on a defendant for the damages flowing from specific conduct, assuming that all the other elements of delictual liability (e.g. fault, causation, harm etc.) have been proven. Reasonableness, in this context, is assessed based on considerations of public and legal policy informed by constitutional values.

The approach to determining wrongfulness will depend on the nature of the carbon major's alleged conduct (i.e. positive acts, omissions, statements) and the consequences (i.e. damage to property or person, pure economic loss, nervous shock, grief etc.).

### THE NATURE OF THE CONDUCT AND THE CONSEQUENCES

Wrongfulness will be presumed where a carbon major's actions result in harm to people or their property. This presumption is based on the common law right to be free from harm to oneself or one's property. Where individuals seeking to bring a claim have suffered personal injuries or damage to property due to the alleged actions of a carbon major, wrongfulness would be presumed.

If the carbon major is accused of not taking action or making misleading statements, wrongdoing is not automatically assumed, even if harm does occur. The person making the claim must provide evidence supporting the inference of wrongdoing.

In existing climate litigation, either in common law or public law, litigants have relied on different forms of alleged wrongful acts and omissions. The case studies below provide such an example:

## Case Studies

**Individuals bring claims against carbon majors have claimed that the wrongful conduct is in releasing significant greenhouse gas emissions.**

In the case of *Lliuya v RWE*, Mr Lliuya seeks to hold RWE liable for its share of greenhouse gas emissions. He intends to use the compensation to cover the costs of making changes to his property to protect it from potential climate change damage.

In other cases, individuals bringing claims have made attempts to show that carbon majors intentionally misrepresented their greenhouse gas emissions and relevant climate science. In the case of *State of Minnesota v American Petroleum Institute* and others, the State of Minnesota brought a claim against members of the fossil fuel industry claiming that

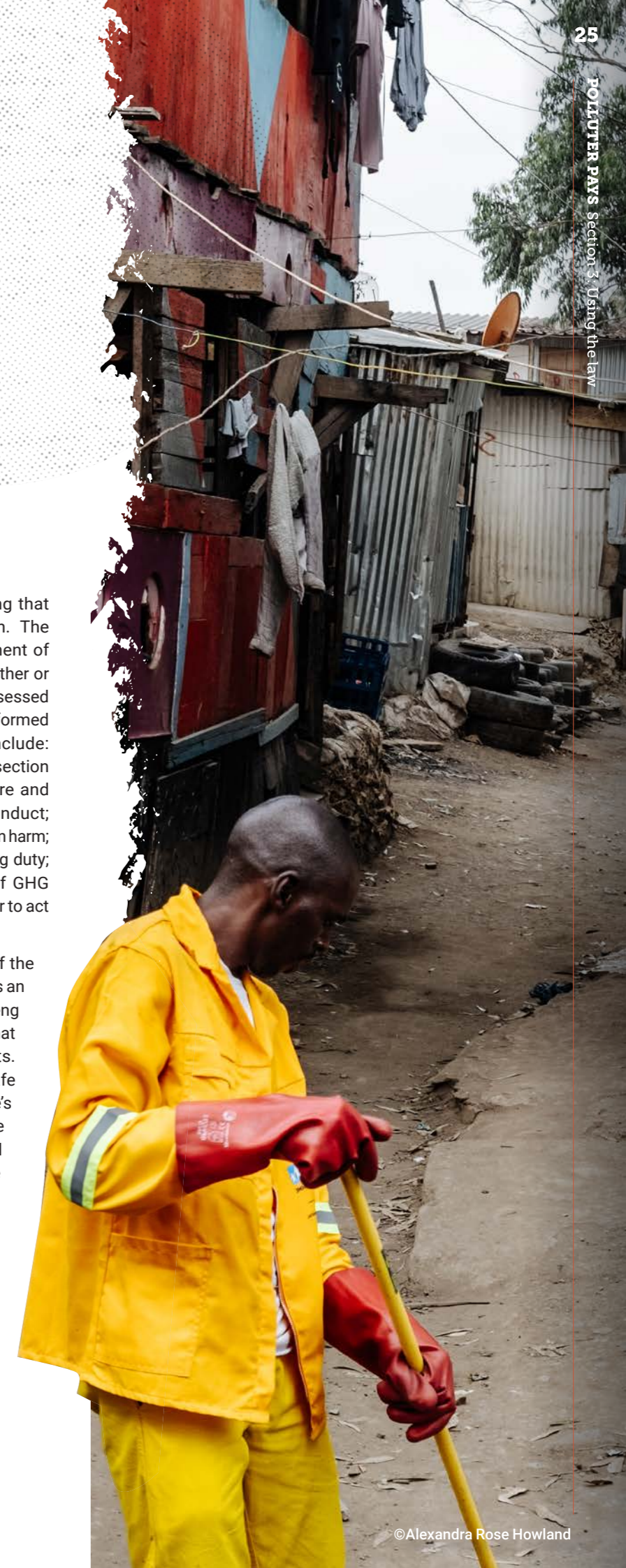
they caused climate change harms by misleading the public and downplaying the threat of climate change. In this case the State of Minnesota seeks compensation from these fossil fuel companies for various climate change related loss and damage, including the costs to make public infrastructure more resilient to withstanding future climate related harms.

In other cases, claimants have alleged that carbon majors have violated a duty of care and human rights obligations by failing to take adequate action to lower their contributions to climate change.

### RELEVANT CONSIDERATIONS FOR DETERMINING WRONGFULNESS

Wrongfulness is determined after-the-fact, assuming that all the other elements of the delict have been proven. The question asked by the court, as part of its assessment of the wrongfulness of a Carbon Major's conduct, is whether or not it will be reasonable to impose liability. This is assessed based on considerations of public and legal policy, informed by constitutional values. These considerations include: (1) constitutional rights and principles, including the section 24 constitutional environmental rights; (2) the nature and extent of the harm; (3) the social utility of the conduct; (4) actual knowledge that the act or omission might result in harm; (5) reasonable foreseeability of harm; (6) a pre-existing duty; and (7) the presence of any statutory regulation of GHG emissions that imposes a legal duty on a Carbon Major to act positively to prevent harm.

The Constitutional Court and the Gauteng Division of the High Court have confirmed that the section 24(a) right is an unqualified and immediately realisable right. The Gauteng Division of the High Court has further acknowledged that climate change poses a serious threat to these rights. This arguably forms the basis for an entitlement to a "safe climate", which does not pose direct threats to people's lives, health and well-being due to anthropogenic climate change. This approach suggests that constitutional rights and values support the idea that it would be justified to hold carbon majors responsible for significant greenhouse gas emissions and other potentially wrongful actions.



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“ We are so scared with our children. We worry whenever we hear the rain. The community has changed so much since the floods, it is not the same. People have lost their way.

- Quarry Road resident



## Fault

A carbon major will only be liable if it is shown that it was at fault. Fault is established by proving either negligence or intention. In most cases of climate-linked disasters, intention would be difficult to prove. The lower bar of negligence will be the appropriate test.

Negligence involves an assessment of whether: “(a) a [reasonable person] in the position of the defendant –(i) would foresee the reasonable possibility of his conduct injuring another in his person or property and causing him patrimonial loss; and (ii) would take reasonable steps to guard against such occurrence; and (b) the defendant failed to take such steps.”

Therefore, a person seeking to bring a claim against a carbon major would have to show that: (a) the harms of climate change were foreseen by the carbon major or were reasonably foreseeable; (b) a reasonable person in the position of that carbon major would have taken steps to prevent the harm from occurring; and (c) the carbon major failed to take those reasonable steps.

### REASONABLE FORESEEABILITY

Courts limit liability to harm that was foreseen or was reasonably foreseeable at the time of the wrongful conduct. If the harm is too unlikely to foresee, it cannot be the basis for legal action. What is reasonably foreseeable depends on a number of factors and the particular circumstances of each case. These may include: like the likelihood of the harm occurring, if the harm does indeed occur what is the extent of the damage likely to be, and the efforts required to prevent the risk from occurring.

If the likelihood of harm occurring is very high, then the harm is usually considered foreseeable even if the extent of the potential damage is very small. On the other hand, where there is less likelihood of the harm, but the degree of the harm would be significant, the harm may also be considered reasonably foreseeable.

On current scientific knowledge, it is certainly reasonably foreseeable that the industrial production and burning of fossil fuels, resulting in substantial GHG emissions, contributes directly to climate change, which results in natural disasters.

There is likely to be significant debate about when such harms were reasonably foreseeable, which would serve as a potential cut-off date for liability. For example, if a carbon major could show that these harms were only reasonably foreseeable from the early 2000s (as a hypothetical example), this would potentially immunise them from liability for all acts and omissions before that date.

Therefore, it could be sufficient to prove that a carbon major foresaw or ought reasonably to have foreseen that their actions contributed to the general risk of extreme weather and flooding of low-lying coastal areas in Southern Africa, induced by climate change. It may not be necessary to prove that the exact events which took place in KZN in 2022 were foreseen or reasonably foreseeable.

### PREVENTABILITY

Once it is shown that a reasonable person would have foreseen the possibility of harm occurring, the question then turns to whether a reasonable person would have taken measures to prevent the occurrence of the foreseeable harm. This involves a weighing up of various competing factors.

If, for example, it is claimed that a carbon major was negligent from the 1960s to the present, this would require a careful analysis of what a reasonable company in its position could and should have done to prevent this harm from occurring, given the state of knowledge at the relevant time and the available technology and resources.

In English law it is accepted that simply following the industry standard at the time does not excuse negligence if common sense or newer knowledge show that the industry standard “is clearly bad”. Where a party has in fact greater than average knowledge of the risks, they may be obliged to take more than the average or standard precautions. This is particularly relevant to carbon majors, given the existing evidence of their detailed and long-standing knowledge of the harms.

## Causation

A person bringing a claim against a carbon major would have to prove that the carbon major's negligent emission of greenhouse gases (and other wrongful acts) is causally linked to a particular climate change related event (i.e. the KZN floods) and the resulting losses.

Causation, in our law, turns on two separate inquiries. **Factual causation:** whether the carbon major's intentional or negligent conduct was the factual cause of the loss. **Legal causation:** if factual causation is established, whether the carbon major ought to be held liable for the losses, which turns on whether the negligent conduct was linked sufficiently closely to the loss to justify holding the carbon major liable.

### ATTRIBUTION SCIENCE AND CAUSATION

A claim for damages arising from the KZN floods would involve the application of attribution science. Initial studies have already established a link between the KZN floods and climate change. Attribution science will play an important role in showing that it is more probable than not that a carbon major's actions caused or contributed in a significant way to the KZN floods.



### FACTUAL CAUSATION

Climate loss and damage cases are an extreme example of "cumulative causation", in which multiple causative factors contribute to the resulting harm.

The traditional "but-for" test used in our law for factual causation has struggled with such cumulative cases. The test asks: had the negligent conduct not occurred, would the plaintiff have suffered the loss? In the case of negligent omissions (a failure to act in the presence of a legal duty), this test asks whether the loss would have occurred had the defendant taken positive, reasonable action. On a strict application of this test, it would be challenging to show that "but-for" the negligent actions or omissions of one or more carbon majors the KZN floods and resulting losses would not have occurred.

However, there are at least two alternative routes available in our law to establish factual causation. First, there is the "flexible" approach to factual causation, endorsed by the Constitutional Court. This "flexible" approach merely requires a "probable reduction in risk" of loss to establish factual causation.

On this approach, a person bringing a claim could potentially succeed by showing that, had a carbon major taken reasonable, non-negligent steps to reduce its greenhouse gas emissions (or refrained from other wrongful conduct), there would have been a probable reduction in the risk of the KZN floods and resulting losses occurring, or occurring with the same intensity.

The second approach is the "material contribution" test, which has also been endorsed by the Constitutional Court. In terms of this approach, factual causation can be established where the negligent act or omission caused or materially contributed to the harm giving rise to the claim. On this approach, it may be sufficient to show that a carbon major's negligent conduct made a material contribution to the intensity and duration of the KZN floods and the resulting losses.

There is also the possibility of developing the common law in line with section 39(2) of the Constitution, to recognise further tests for factual causation. Other jurisdictions have adopted similar approaches such as the "negligent exposure to risk" test, which has been limited in its application. The requirement of causation has been found to be met where it is shown that negligent conduct exposed a person to risk, even if it cannot be determined what caused the losses. Taking this route would require presenting evidence and argument justifying a development of the common law.

### LEGAL CAUSATION

The test of legal causation is intended to limit potentially limitless liability. There is an overlap between the question of wrongfulness and the test for legal causation, as the question of "remoteness" of the harm occurring, which assesses the reasonable foreseeability of the harm, is a relevant factor. The less likely the harm is from the conduct in question, geographically or temporally, the more difficult it will be to establish legal causation, unless the harm was foreseen or reasonably foreseeable.

Legal causation may be broken by a new intervening event, which is said to break the chain of causation, thereby making it unfair to hold a defendant liable for losses suffered.

A determining factor is the evidence of reasonable foreseeability. One could argue that it is foreseeable that those worst affected by climate-linked disasters are the most vulnerable, who live in areas where governments are least equipped to address these disasters. In those contexts, state dysfunction, incapacity, and the unconstrained development of informal housing would arguably not qualify as new intervening events.

It is also well-established that intervening omissions (as opposed to acts) are generally less likely to constitute an intervening event. This is so even where the intervening act consists of a negligent failure to prevent damage caused by the defendant's wrongdoing. Therefore, state failure and dysfunction, alone, would not necessarily be sufficient to break the chain of causation.

In addition, the vulnerable position of the victims of the floods and their desperate circumstances would not, by themselves, be sufficient to break the chain of causation. Our law has long recognised that a negligent party takes their victim as they find them, as reflected in the so-called "thin-skull" rule. Pre-existing physical and psychological vulnerabilities do not amount to causation-breaking events. By extension, a victims' poverty, their lack of suitable housing, and inability to make proper preparations for flooding should be regarded as irrelevant. Ultimately, considerations of public policy, fairness and justice will play the most decisive role.



## Remedies

A person or persons seeking to bring a claim against a carbon major, have a range of remedies to choose from which include: a declaration of liability, damages (monetary compensation) and interlocutory relief (this relief is however limited where a foreign carbon major is involved due to the court's inability to enforce orders made in South African courts against a foreign carbon major).



## Conclusion

Success in bringing a claim for loss and damage will by no means be an road to easy victory. It will require extensive research on the carbon major that damages are sought from, its activities and its links to South Africa. In addition, an extensive evidence gathering process will be required on the extent and globally distributed nature of a carbon major's polluting activities, along with expert attribution evidence to draw the necessary links between the carbon major's emission and climate change related harms.

Having said that, there can be no doubt that there is significant potential for a viable loss and damage claim in delict against a foreign carbon major.



## Windfall Tax

**A windfall tax is a levy imposed by a government on companies that have benefited from circumstances that they were not responsible for – in other words, a windfall.**

Fossil fuel companies and the financial industry that funds them have in recent years made extraordinary profits which can be attributed to amongst other things, the impact of Russia's invasion of Ukraine, and high interest rates adopted by many countries in response to growing inflation.<sup>50</sup> This excess profiteering has raised the call for windfall tax on these companies in order to fund climate action.

The collection of windfall tax for climate justice action would necessitate the imposition of a levy on fossil fuel and related financial sector companies' excess corporate profits.

**This windfall tax on the fossil fuel and financial sectors is a compelling method to collect funds for climate action<sup>51</sup> including:**



A Just Transition Fund;



Funding climate resilient infrastructure;



Resourcing organs of state, particularly local government, with technical and financial resources to manage urgently needed adaptation measures; and



Compensating vulnerable communities for loss and damage from climate impacts.

An example of this form of windfall tax is the European Union's Solidarity Contribution, which introduces a form of temporary windfall profits taxes on energy companies.<sup>52</sup> Examples include Austria which levied a 40% rate for oil and gas companies where taxable profits are at least 20% above the average profits of the previous four years; and Italy which levied a 50% tax rate for the energy sector and 40% for the banking sector.<sup>53</sup>

Unfortunately, windfall taxes are only a temporary imposition on companies. In order to collect taxes on the fossil fuel and financial sectors for sustained excess profiteering, a more permanent solution is necessary. This can take the form of excess profit taxes which could be designed to capture and tax abnormal profits on a regular basis, without the need to pass separate measures each time a global crisis makes a particular sector unusually profitable.<sup>54</sup>

In a world where the climate crisis is rapidly worsening; high-income countries are failing to keep their promises on climate finance and public services, and social protection systems which are central to climate resilience are severely underfunded, especially in many developing countries. Revenue from windfall tax or excess profits tax could help scale up international finance for these crucial sectors. Ultimately, while the broader tax regime is restructured to support climate justice action, windfall tax can provide urgently needed resources in the interim.



# Conclusion and recommendations



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**There is an urgent and existential climate crisis.** There are already devastating losses and damages being experienced, mostly by at-risk, vulnerable and under-resourced parties. The losses and damages are going to increase, either more or less intensely, depending on how successful we are at curbing our GHG emissions. These emissions are overwhelmingly caused by burning fossil fuels. A relatively small number of entities are making astronomical profits from activities which have been a significant cause of this crisis and are one of the main reasons for its worsening.

**W**hy should this money that has been made in this way not now be used to compensate parties for loss and damage, and for helping to minimise future loss and damage? With this question in mind, and considering the discussion and information in this report, there are a number of pathways and activities going forward that are likely to be useful in advancing this work.

For the **lawyers**, it will be valuable to continue engaging with and understanding the limits of existing statutory, constitutional and common law and how these can be applied and expanded to adequately address the relatively new climate crisis, its causes and its harms. Growing knowledge of climate change considerations and having an understanding of the scientific, economic, ecological, sociological, political and other dimensions of the crisis will help with facilitating understanding with and between clients, judges, experts, funders, supporters and critics. Careful but firm challenging of the traditional limits of the law of delict will support the necessary development of common law to be able to account for a new but inevitably prolific form of harm.

For **local government roleplayers**, there will be much value in learning about, replicating and enhancing climate resilience measures that also create socio-economic opportunities for the many, many people in the country and around the world that are being sacrificed and forgotten. The community ecosystem based adaptation initiative in Ethekewini is a good example of the kind of intervention that not only addresses climate adaptation, but can also have mitigation effects and help avoid loss and damage.

**Academics and scientists**, it is hoped, will continue and expand on the excellent work being done and which supports advocacy and litigation. Attribution science has been a breakthrough, and the research and engagement on both the causes and impacts of climate change shed much needed light as most of society increasingly aligns with the needs for a sound climate response.

**Politicians and high level state decision-makers** would do well to understand that decisions which exacerbate climate harms will in the not-too-distant future become far costlier, in money and other terms, than whatever financial and other benefits there are to be had in maintaining the carbon intensive status quo.

The **carbon majors and unrepentant fossil fuel interests** should realise that their actions are being watched, the harms they cause are being recorded and the claims for compensation and reparations are being developed. It is not too late to commit to a deep and authentic transition to low carbon activities, and it would be appropriate for them to establish compensation and climate resilience support mechanisms while they are still able to do so, to some extent, on their terms.

And finally the **climate justice movement** needs to continue and expand its knowledge growth and sharing, its pressure on emitters and their enablers, its engagement with the intersectional nature of the harms, and exercising its watchdog role in ensuring that all climate response measures create a better world and better lives for those who have been unjustly disregarded in the current system.

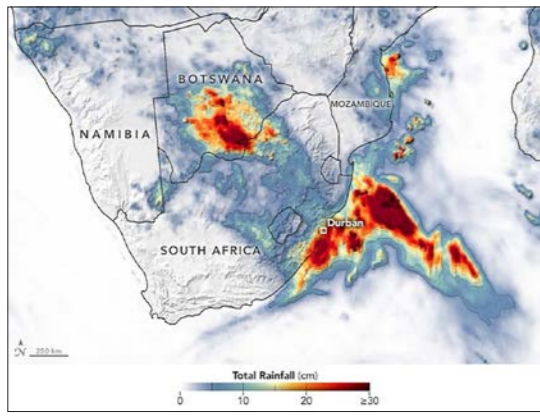
The pathway to meaningful redress for, and avoidance of, climate loss and damage is potentially a challenging one. But it is one that has a **safer and more just world** as its destination.

APPENDIX

# Impact case studies

## Impacts of the April 2022 floods on individuals and communities

This section narrates and draws excerpts from the more comprehensive case studies in Professor Sutherland's report<sup>55</sup>, where the extent and the depth of trauma, devastation and loss in experienced by a range of people are shared. These case studies span four different contexts, and document the immediate and mid-term (23 month) losses and impacts of a number of survivors of the disaster.



### CASE STUDY 1 Quarry Road West informal settlement

Sandwiched between the banks of the Palmiet river and the M19 highway, this settlement in Durban's urban core was established in 1987 and comprises around 1200 dwellings. The settlement has experienced 2 major floods (2019 and 2022) and 2 major fires (2021 and 2023) and, on top of all else, is a tragic case study of the cumulative impacts of climate and other disasters.

The community had for 10 years prior to the 2022 flood been involved in a range of environmental governance projects, many in collaboration with the city, researchers and others stakeholders. These include initiatives to: upgrade the settlement; reduce its impact on the catchment; reduce the risks from the river (including flood risk mapping); improve climate resilience and participate in the flood early warning system.

Even with well-developed capabilities and knowledge, the community and individuals were devastated by the flood. The early warning system and engagement by city officials and UKZN researchers helped to ensure some level of preparedness, and this along with heroic actions by residents and helpers at the peak of the flooding on the night of 11 April avoided dozens, if not hundreds of potential deaths in this particular settlement.

Nonetheless, 250 homes were washed away, along with shipping containers (serving as shops) and communal ablutions block. Hundreds of people lost everything. In addition to loss of shelter and possessions, there are widespread accounts of trauma, displacement, loss of income illness, disrupted education and more.

*"We carried the children on our backs through the raging water, we formed a human chain, we were terrified." – Quarry Road resident*



A drone image taken on 12 April 2024 of the hole created by the river changing course and of the containers washed across the road (Source: Yajur Chotai)

*"Then in 2022 floods I went to see where my house was only to find a big hole that was like nothing was there, it broke my heart, to the point that I had a pain in my chest. I wanted to breakdown emotionally, it was like a pain that cuts my heart. It was an outburst, uncontrollable crying, not feeling like myself, and I remember people who came to see us that morning, they were strong, I felt weak, I did not want to be around other people, I felt empty." - Quarry Road resident*

*"We are so scared with our children. We worry whenever we hear the rain. The community has changed so much since the floods, it is not the same. People have lost their way". - Quarry Road resident*

*"Through being actively engaged in both these floods and mapping the short, medium and longer term impacts, I have understood how flood events have cumulative impacts that erode resilience to the point that residents are no longer able to cope, or are so undermined in terms of their development trajectories, that they find their lives going backwards rather than forwards in all aspects of poverty, inequality, human capabilities, livelihoods and mental health." - Professor Sutherland*



The Quarry Road West bridge which was blocked with alien vegetation, indigenous vegetation and solid waste (Source: Cathy Sutherland, 12 April 2024)

Restoring order, beginning again: the bridge of blankets as women clean up and cope on 13 April 2024 (Source: Cathy Sutherland)



## CASE STUDY 2 Dassenhoek Peri-urban area under traditional authority

This case study looks at a household in Dassenhoek, a peri-urban area on the outskirts of Durban, under the dual governance of eThekweni Municipality and the traditional authority

The eleven people in the household, ranging from an elderly grandmother to a 4-year old, lived in a 7-room house built in 1965.

"On the night of 11 April, 2022, the family was eating supper at 7 pm together at the dining-room table. It had been raining all day but it did not feel like heavy rain according to the family. The family heard a noise, it was the neighbours screaming at them to come outside. They said "the floods are coming. Your house is falling down".

When [the eldest daughter] ran outside she saw the water rushing under her house and the ground underneath the house being washed away. She said she did not believe her neighbours words until she went outside to look. Water was rushing out from under the house, and the house began to shake and move. Everyone was still inside and so [the daughter] screamed for them to leave the house. She was so scared, but luckily the family, including her elderly mother left the house quickly.

They stood together and watched their house falling down, it cracked and fell down the slope. They all ran away from the house in the darkness and were terrified. They ran to their neighbours' house to shelter....

....the next morning they went to look at the house. All the land under the house was gone and the saddest thing was that the family graves were gone too: the graves of her father and her two sisters which had been in a flat area in front of the house. They never found the coffins, only her father's cross was found on the road. She said that hurts her so much, that there is nothing, that the graves are gone. This is very difficult for her mother who is still grieving the loss of the graves....

"The five biggest impacts of the floods are that [the daughter] feels very scared, she feels trauma every time it rains now. She feels she needs to work hard to get money so that she can rebuild her house. She is determined to rebuild it but the land where it is, is gone. She said she must start saving, she feels pressure to do this, so her brother can move back into his house. However, she earns R4800 per month in a full time job and so she does not know how she will manage to do this, as it will cost R100 000 to rebuild her house. She is trying to get a loan but that is difficult. The furniture and clothes she lost from the house was estimated to cost R40 000." – Excerpts from Professor Sutherland's report.



## CASE STUDY 3 Westville suburban home

This is the case study of a researcher (and colleague of Professor Sutherland) who lives in Westville, a middle to upper income suburb of Durban. The suburb, parts of which are higher up the Palmiet River which runs through Quarry Road, experienced damage to houses, extensive landslides and flooding despite well-built structures and good stormwater drainage.

"He explained that by 1 pm on 11 April 2022 there already had been 100 mm of rain in Westville. The first wall, the driveway wall collapsed at around 4 pm into the neighbours property.

That was very stressful and [the researcher] went out and tried to put a hose pipe onto the driveway to divert the water. Once night time fell, water was coming into the property in the form of three streams and all [the researcher] could think of was how to slow the flow of water. He was cutting branches to try and make impoundments around his house. He felt extremely stressed as he and his wife were concerned the house would collapse.

They packed everything important to them and they made an exit plan. However, they knew how bad the rain was and they were interacting on the CBEWS communication site, and so worried about how they could drive out of Westville....

Four retaining walls had fallen down and because his property and those below him are on a steep slope down to the Palmiet River, water and the collapsed walls cascaded down on to his neighbour, with water and debris moving down to each successive neighbours property. [The researcher] was very concerned that his neighbours would make him liable for the damage to their properties....

...[The researcher] and his wife return home when it rains, as they are so fearful of what the water on their property is doing and they want to be there to direct it into the one outlet that has now been created and to avoid damage to their neighbours property. Every time it rains their hearts sink. They no longer invite friends to their home as they are so concerned their friends' children will fall or hurt themselves on the collapsed wall and on the sandbags now in place to secure the driveway." – Excerpts from Professor Sutherland's report.

## CASE STUDY 4 National Sea Rescue Service (NSRI)

The final case study refers to the impacts of the floods on rescuers and responders, and shares the story of a female member of the National Sea Rescue Service (NSRI).

"NSRI members are very well trained in sea rescue and swift water rescue, but nothings had prepared [her] for the events and call outs she would experience on the night of 11 April... ..[her] NRSI team launched a small boat on the roads of Durban to rescue people stuck in trucks and taxis close to River Horse Valley. The boat was being moved around so much by the floodwaters on the roads, that [her] head became stuck in a tree as they attempted one rescue of a truck driver and this became a life and death situation. Fortunately she was able to get out of trouble with the help of her crew leader, but he would not launch the boat again after the risk and danger they had experienced..."

"[she] told me that floods of 2022 upset her because floods and landslides happen so often in Durban, impacting on poor communities, but they do not make the news or very little attention is paid to them as people lose their lives in poor peri-urban areas and informal settlements. Because the 2022 floods affected both the wealthy and the poor, and businesses and were more severe and extensive, they received far more attention. This kind of inequality in response is not acceptable. ...[she] said that when there is loss of life in a disaster, it does not just traumatize the family members, but it traumatizes the whole community."

"She also feels so concerned as a rescuer, as often she is the one who takes the calls, and she says there are not enough resources to go everywhere, and so she feels like she has to play God, as she makes decisions as to which call out the rescue teams should go to, usually choosing those where there is the greatest chance of survival. She has seen young children dressed in pyjamas, standing with wide eyes as dead people are dug out of the mud in informal settlement communities that are so precarious that structures collapse burying people in mud." – Excerpts from Professor Sutherland's report.


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