

GREEN

THE WORLD AS WE SEE IT

DISASTER BY CHOICE

How Zambian farmers could have cracked the climate change blame game

AND MORE!

Why do we
need to
prepare?

Disaster by choice: corporate accountability and risk reduction to tackle climate change

How Zambian farmers could have cracked the climate change blame game

The world as we know it is changing. Disasters are increasing, no one knows exactly how global warming will aggravate climate change, and people are becoming more vulnerable every day. Are States prepared to face the consequences? Who will protect us? Are our hands tied?

A lesson in accountability from Africa

A group of nearly 2000 Zambian farmers [sued Vedanta](#), a global mining company UK based, claiming that the copper mine they were working at has been releasing toxic emissions to the watercourses (locally crucial for drinking and irrigation). The [catalytic effect this case could have](#), that had nothing to do with Climate Change (CC) in the first place, is that the farmers sued the parent company and not the local subsidiary that operated the mine. It would be ineffective to pursue litigation against the Zambian subsidiary because of their uncertain financial position and the lack of experienced lawyers in Zambia, amongst other reasons. Thus, the UK Supreme Court confirmed that UK parent companies can be held liable and the UK courts have jurisdiction to attend their claims. The principle behind the UK courts' decision may open the ground for a rule of precedent, as we need to consider greenhouse gas emissions cumulative from both parent companies and subsidiaries, because taken separately they are insignificant to make a meaningful case.

What the Zambian farmers didn't know was that they were trailblazing and finding a new path for corporate accountability, perhaps the most effective mechanism to enforce climate positive practices.

Suing corporations for Climate Change

State accountability at the international level is nearly impossible. To start, most of the polluting practices are made by private corporations – only [twenty oil extractor companies are responsible for 35% of the carbon dioxide and methane emissions since 1965 all over the world](#). Despite their devastating impact, they have been expanding their operations continuously.

A [wave of corporate accountability for climate change legal cases](#) has been

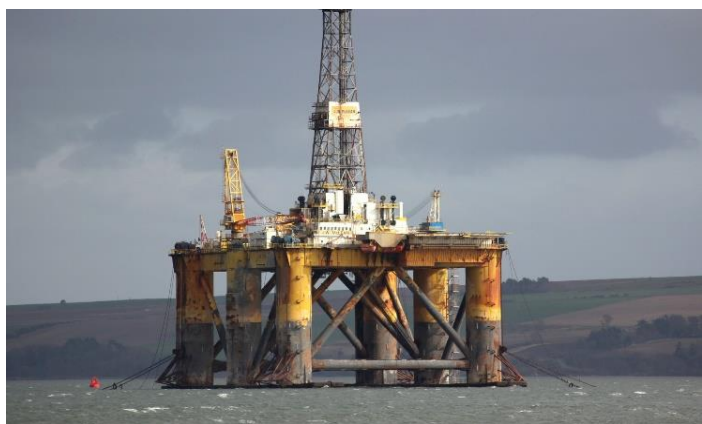


Figure 1 Sea Drilling structure. Source: BP

washing over the oil and gas industry. It started over a decade ago after the 2005 Katrina hurricane, when a group of affected citizens whose property was destroyed sued some fossil fuel giants like ExxonMobil, Shell, and BP. They claimed their greenhouse gas emissions contributed to Climate Change, hence the ferocity of the storm and generally greater harm caused. Three years later, a [village in Alaska sued the same companies](#) after being forced to relocate due to melting sea ice. Courts did not even address the question before dismissing both cases, but since then similar actions have been emerging. Litigation can reshape the way we produce energy and its connection to Climate Change. The industry has been profiting from fossil fuel extraction but has not had to internalize negative externalities: to pay for the harm it has caused.

Litigation for change

It is still too soon to tell the outcomes of this case, however it might be the beginning of an enforceable system for Climate Change accountability. The biggest problem with Statal gatekeeping and accountability is that in international law we can only rely on self-compliance and policing. Although there are treaties and binding international agreements in place, they rely on the States' cooperation for enforceability. Shifting from soft law agreements and recommendations (thus [not legally binding](#)) to legal obligations that bind the entities involved (hard law), whether governmental or private, is a crucial step to encourage collaboration and results on Climate Change.

Changing the tone: There is nothing natural about disasters

A [disaster](#) is a natural event or force that causes damage to property and/or loss of life. Our stomachs sink when we hear about tsunamis, hurricanes, earthquakes, enormous floods, historical wildfires, thousands of people having their lives devastated and livelihoods destroyed. Unexpected and unprecedented events have been happening on our planet ever since it formed. We normalize them because they are “naturally occurring”, at most we label them as “acts of God”, but at its core there is a semantic dissonance: most of what we call natural disasters are not disasters, but hazards. There is nothing natural about disasters, says Ilan Kelman, the author of [Disaster by Choice](#).

If there is a tsunami on a deserted island, we call it a storm, not a disaster. Natural hazards only become disasters if they affect human populations. In disaster high-risk areas like Japan or California multiple [earthquakes can occur without any deaths](#) and with minimal collateral destruction, but in other countries morfs into chaos and destruction. When we call climate catastrophes natural disasters, we feel



Figure 2 Wave hits a coastal house. Source: Getty Images

compelled to accept the inevitability of their occurrence, and perhaps most importantly fail to hold anyone accountable.

From natural event hazards to actual disasters

Since 1980, disasters have killed around [1,6 billion people](#). Levels of mortality in disasters are closely related to income level and governance risk management. From governments, to international actors, people who live in risky areas, to academic communities all have a part to play in minimizing or increasing the factors that lead to a crisis amidst a natural event.

[Disaster Risk Reduction](#) (DRR) is a central concept that focuses on protecting individuals from disasters through preparedness. The DRR approach assesses the risks of disaster in a certain region to create both mitigation and adaptation measures for pre and post-disaster response. It aims to limit the negative impacts of hazards by working towards reducing their intensity and build capacity amongst communities to prevent, survive, and recover from them.

Why is it important?

Globally, most regions can be vulnerable to a range of different shocks, especially if we consider that over [55%](#) of the worlds' population lives in cities. In some cases, we can change the risk structure itself, for example, to expand a river channel to reduce the flow, but most times infrastructures are not resistant to extreme weather conditions and create an illusion of resilience that is simply not there. There is a pressing need to strengthen local tools and national approaches to protect our economies, and most importantly ensure the safety of human and natural assets. If we can predict a disaster, we can reduce its impact.

Planning for the unexpected

If an urban area is unprepared for a natural event, it can take more than a decade to recover. Resilience is [the capacity to recover from a hazard](#) and rebuild stronger afterward. It can be divided in [5 main areas](#): 1) institutional whether the governing bodies are fit to act; 2) economical how the markets are affected; 3) social when communities are inherently exposed or capable to sustain; 4) environmental when the areas are already more prone to natural events; and 5) infrastructural assesses whether structures are appropriate or not to the local climate characteristics. The concept of resilience has been gaining greater importance in the international scene, as vulnerable groups and the poor are at higher risk of disaster because they might lack resources to recover. This is deeply connected to humanitarian-development within the regions.

High stakes

This type of crisis brings up underlying social problems and leads to recurrent crises after a disaster. For example, New Orleans suffered a [structural transformation](#) after hurricane Katrina in 2005. The vulnerabilities of the black communities living in poor housing 5 feet below sea level surrounded by water channels were completely exposed. It was a disaster waiting to happen. People did not have a car to evacuate, early-warning signals were not effective, and people got stuck. The same about the [2015 earthquake in Nepal](#) – how could the informal settlements and the 600,000 damaged buildings in the high-risk Kathmandu have resisted? Or the droughts in the Horn of Africa, another type of humanitarian crisis, how can we fix that? All these require perspective to tackle the root causes, rather than only responding to the consequences of a disaster.

People can live in risky areas because they are not aware of the risks or because they cannot afford a safer place, but in both cases, States should intervene. Before the disaster governments can invest in [mapping our vulnerabilities](#) through data collection incentives (grassroots, citizen data) and data-driven policies and regulations that will lower the disaster risk and facilitate the response once an event has occurred.

Resilience as survival

[Resilient countries](#) are the ones that assess, plan, and act to prepare for and respond to all kinds of predictable (or not) natural events. Local governments need to guarantee the capacity to reduce both the damage and the recovery period from any potential disaster. This will raise the capacity of communities to protect people's lives and goods, secure development, and stabilize economies. Reducing risks by increasing capacities and decreasing vulnerabilities drives positive adaptive change.

Development mitigates climate change

Poverty makes people more vulnerable to extreme events, therefore investing in resilience is a way of harnessing international development where no one is left behind. By tackling our vulnerabilities to reduce disaster risk, we are, after all, developing the world in a sustained way. Why don't we just equate DRR to measurable development? If avoiding disasters caused by extreme weather events is a responsibility of the states, this all comes together in the DRR concept. Not only in high-risk areas, in the entire world.

Who among us is at risk?

A huge part of the population is threatened by natural events. For instance, an estimation of [379 million urban residents is threatened by river flooding](#), along with other [200 million](#) people living along coastlines. Climate change is significantly increasing the number of people at risk – and why is that?

As we know, the planet's temperature is rising due to [4 key types of green-house gases](#) (GHG's) that human activities send into the atmosphere, especially carbon dioxide (CO₂), for which fossil fuel use is number one factor. Most of the pollution comes from the production of electricity, industrialization, agriculture, transportation, and construction. What happens is that the greenhouse gases [trap the heat](#) (Figure 1) inside the atmosphere and make the planet warmer. Oceans sustain over 90% of this temperature rise, which directly affects the food supply. As regions go warmer the kind of sea life that thrives and the types of crops that grow changes because elevated CO₂ levels reduce essential nutrient content in plants.

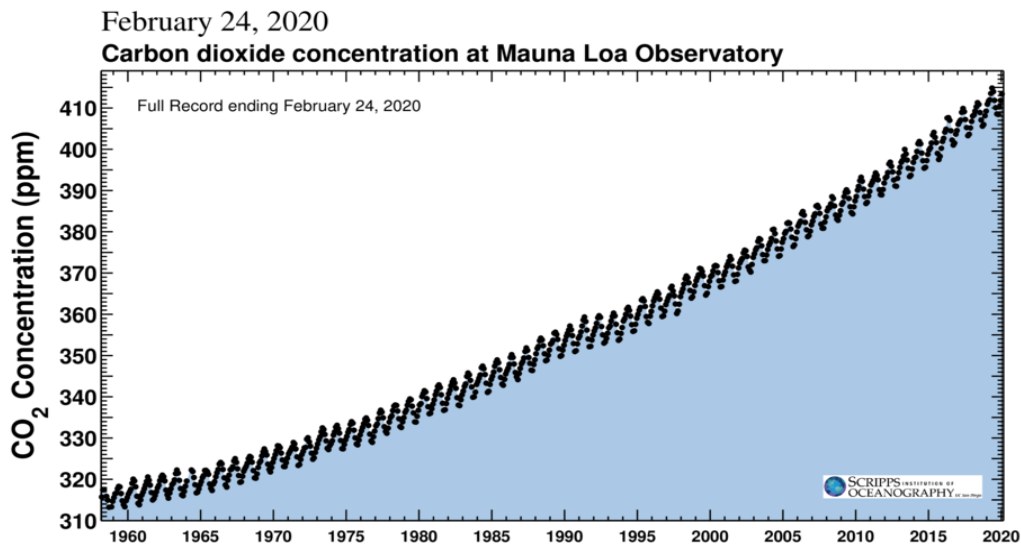


Figure 3 - Carbon dioxide concentration from 1960-2020. Source: Mauna Loa Observatory (Hawaii)

This change in the climate we experience has a huge impact on biodiversity. The 24th UN COP (Convention of the Parties) on Climate Change in 2018 had as its main purpose to finalize the 2016 Paris Agreement and agree on a common action plan to avoid a global temperature rise by not more than 2.0 degrees, ideally 1.5 degrees to before the industrial era levels.

What happens if we surpass the 1,5-degree barrier?

As we can see on the WWF infographic, climate risks are different depending on the temperature raise we reach. In both scenarios' [things get hot](#). Flood risk doubles, water availability drops and exposes large parts of the land to severe drought. A considerable part of the species will be affected, including humans that will be experiencing extreme heat waves every 20 years (the European [heatwave in 2003](#) killed 70 000 people) and forced to migrate due to sea-level rise. There will be ice-free summers in the Arctic every 10 to 100 years, high risks for the marine eco-systems and their ecological function, and most worlds' coral reefs will be lost.

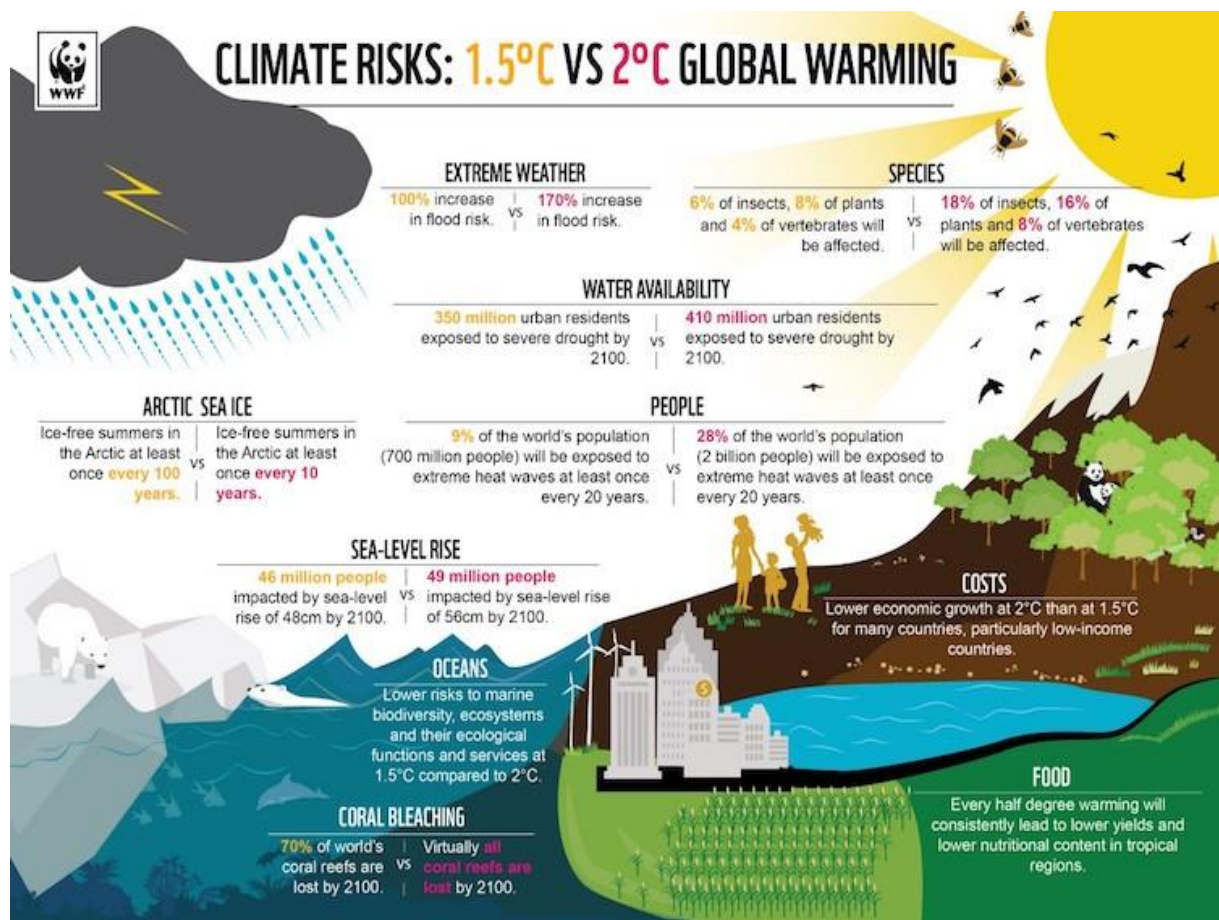


Figure 4 Climate Risks of 1.5C vs 2C of Global Warming. Source: WWF

At the current rate that global warming is rising, we need a disruptive approach to avoid a major world disaster. One of the conclusions presented by the scientific panel in the COP was that [2018](#) emissions have peaked at dangerous levels above what will keep our planet stable and safe. To have a good chance of keeping global warming under 2°C, we are allowed a finite carbon emission budget, which translates the amount of pollution we can put into the atmosphere. There is only [22%](#) of that budget left and at the current emission rate, we are expected to reach it in the next 16 years, around 2035. As Greta Thunberg keeps repeating in her speeches around the world, “[our house is on fire and we are not panicking](#)”. We are amidst a crisis that is not being treated like one.

Snowball effect

With this in mind, we can now understand why climate change is increasing the frequency of disasters. And it does not look like it is going to change any time soon. Civil movements have been growing every day, but to tackle the carbon budget quickly enough to avoid the destruction of the world as we know it, we need

effective, urgent, global, multi-disciplinary and multi-sector solutions. As we have discussed above, with adequate planning, building legislation, effective response, and sustainable housing, a natural hazard does not need to become a disaster. Statistics show that the frequency of disasters has increased overtime worldwide, and even though death rates have lowered, there is a [bigger share of affected people](#). In the last decade only, natural events affected more than 220 million people and caused economic damage of USD \$100 million per year.



Figure 5 Greta Thunberg protests for Climate Action. Source: The Independent

The poor are the most afflicted

Unfortunately, the most vulnerable countries (Figure 6) to climate change are far from being responsible for proportional emissions. Droughts, floods, and extreme weather are aggravating the living conditions in the Global South. The cities at higher risk are mostly in Africa, while the safer ones are in Europe and the Americas. Fast-growing cities are at greatest risk due to exponential growth without proper urban planning and little to no environmental infrastructure. The [sea-level rise](#) and global warming are re-shaping the lives of millions.

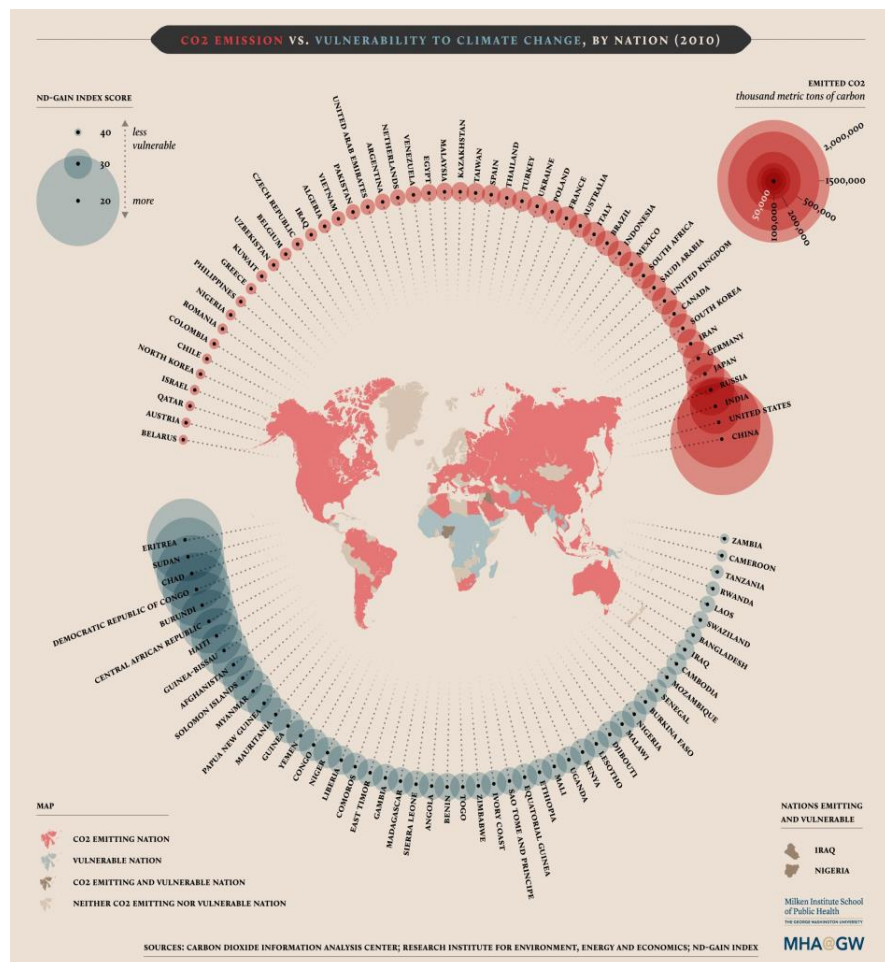


Figure 6 CO₂ emissions vs Vulnerability to Climate Change. Source: MHW GW

The international response

As an international community, we have been [investing](#) more in mitigation than in adaptation action. On a DRR perspective, ideally, our leaders would work with both mitigation and adaptation measures. In the scope of CC, the mitigation efforts focus on reducing or preventing the emission of greenhouse gases, like enforcing renewable energies, optimizing older equipment, or changing management practices and consumer behavior.

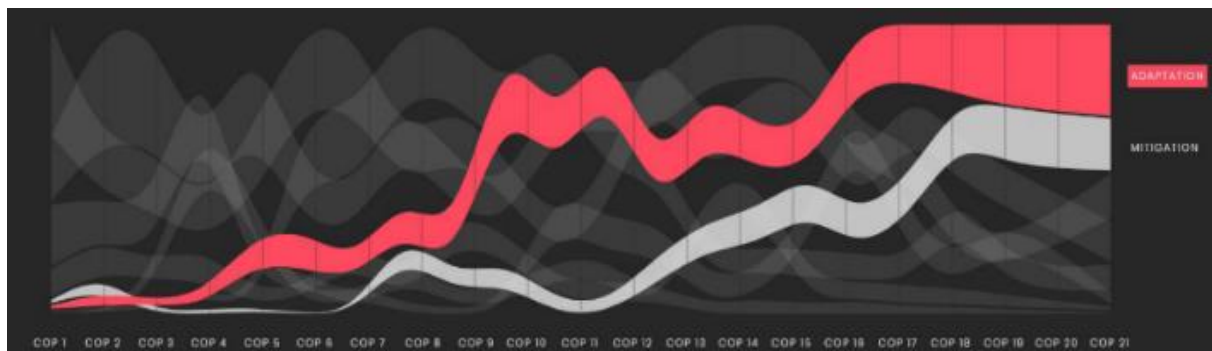


Figure 7 Adaptation vs Mitigation Measures. Source: COP Conferences Reports

On the other hand, adaptation relates to adjustments in ecological, social, or economic systems to address changes in processes, to moderate damages or to benefit from opportunities associated with Climate Change. According to the COP's reports we can see in Figure 7, even though we have been releasing two times more funds towards mitigation, most of the agreed policies are directed towards adaptation.

In 2019, the [Global Commission on Adaptation](#), composed of 34 members from 20 countries and led by the Microsoft founder Bill Gates, the former UN Secretary-General Ban Ki-moon and the World Bank Chief Executive Officer Kristalina Georgieva, published a report concluding that adaptation can have high rates of return. A \$1.8 trillion investment in five very specific categories—weather warning systems, infrastructure, dry-land farming, mangrove protection, and water management— until 2030, could have [\\$7.1 trillion in benefits to the economies](#).

We need more urgency, innovation, and scale. Global actions to mitigate climate change have not been enough to avoid inevitable consequences. Thus, adaptation is not an alternative to mitigation, but a key complement to enable sustainable growth and development whilst protecting the ecosystems, reducing inequalities, and creating global opportunities. Actions can go from commercializing flood-resistant seeds, to building climate-friendly infrastructures, or even investing in reliable storm technologies that can disseminate information earlier and decrease damages.

Who are the gatekeepers of catastrophe?

The problem of accountability is not new. If disasters are increasing due to global temperature warming, who is responsible to protect us? Back in 1988, the UN General Assembly endorsed the establishment of the [IPCC](#) - Intergovernmental Panel on Climate Change – to prepare an extended review and recommendations regarding the state of knowledge of the science of CC, its social and economic potential impact and possible future response strategies. Today it is the UN body for assessing the science related to climate change and since its foundation it has concluded 5 assessment cycles and reports, “[the most comprehensive scientific reports about climate change produced worldwide](#)”. It has also produced several more specific special technical reports in response to requests from the [United Nations Framework Convention on Climate Change \(UNFCCC\)](#), an international treaty signed a few years later in 1992 and ratified by a broad cross-section of both Global North and South countries, including the USA. The goal of the treaty was to “*prevent dangerous human interference in the climate system*”, by “*stabilizing greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system*”. Annually, the parties gather to discuss climate change issues and work towards multilateral agreements, but only in 2005 the Kyoto Protocol, the first set of international rules designed to implement the UNFCCC, entered into force after Russia’s ratification (it was first signed in 1997). However, [carbons’ largest emitters](#) USA, China and India did not, leaving the protocol without the major players to contain the problem.

Key international frameworks

2015 was a determinant year for the adoption of international frameworks. The UN [Sendai Framework for Disaster Risk Reduction](#) (SFDDR) was signed, together with the Sustainable Development Goals, and the Paris Agreement on Framework Convention on Climate Change. The latter, unlike the Kyoto Protocol that established legally binding emissions reduction targets and penalties, includes all countries in the world. [Paris came to overcome Kyoto flaws and bring greater flexibility](#). There are no requirements, targets, or penalties, but rather proper monitoring, reporting, and reassessments of the goals over time so that there is a common strategy and alignment. The SFDDR recognizes the States’ primary role to increase DRR and aims to target and address it through comprehensively understanding the risks, strengthening risk governance, and investing in resilience. The framework also enhances disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation, and reconstruction.

This shows us that we have been aware of the risks we are facing for a long time. And yet, we fail to have a solution or set strategies that will save the world as we know it. Norwegian psychologist Per Espen Stoknes studied why are we denying Climate Change and [identified](#) some mental barriers that explain why it has been difficult for us to deal realistically with the climate crisis. They pertain to the fact that Climate Change is a problem that feels too far off in time and distance (the same distancing we feel when watching disasters unfold on TV and predictions set out for a distant 2050). Some say this, some say that, and overall people feel powerless to go against nature and guilty for their own emissions.

Growth, development, and intergenerational sustainability

To protect our [life-support systems](#) (namely water resources and forests) we need to make sure greenhouse gas emissions are within the means of the planet. The challenge we face today is bigger than getting everybody out of poverty. We also need to make sure we come back from that within what this one planet can provide us, a balance between life-quality and dignity for everyone alive and what we can extract from the planet. Considering that over 1 in 5 people lives without electricity and 1 in 8 are starving, we are [far](#) from our goals on both sides. Only a small part of the world is taking advantage of the available resources, and they are the ones responsible for global depletion.

With the predicted population growth and the middle-class increase, our policymakers must act accordingly through the re-design of our markets, the financial system, its regulations, and the public services. How can we rethink our economies to serve people [better than before](#)? How do we go from theoretical planning to concrete action?

Progress beyond growth

The *lingua franca* of public policy is Economics. We measure our success and how well we are doing through money. But even though we accumulate loads of it, we still do not have a more direct answer for most social issues we are concerned about, like health, housing, and food. The current standard to measure growth is the Gross Domestic Product (GDP), the amount of goods and services produced by an economy, but it fails to integrate social and development indicators. According to the economist Kate Raworth, the author of [Doughnut Economics](#), there are fundamental flaws with this picture as the gap between local businesses and global corporations hides an accumulation of wealth and power disproportionately distributed over the economy.

Promoting sustainable human-centered global economic development

Raworth believes that utility, efficiency, and growth are the concepts we have to master through an innovative economic model that puts human wellbeing in the center of the analysis. It recognizes everyone's right to "[leading a life of dignity and opportunity, while safeguarding the integrity of Earth's life-supporting systems](#)". We cannot walk away from Economics, but we can re-shape it to stop being money-centered (which can be translated into prioritize carbon emissions over large business profits, for example). We depend on ourselves to survive, but we also depend on the planet, ultimately our home, the place where we live.

Let us take a closer look at the 2015 revised Doughnut Economics diagram. In green in the center of the donut, is the social foundation, 12 internationally agreed minimum standards for human wellbeing. The outer ring in red represents the environmental sealing, 9 planetary boundaries (which 4 we have surpassed) - defined by leading Earth system scientists - that seek to protect Earth’s ability to sustain chaotic/disastrous conditions. If we stay below these limits we ensure that the 7 billion humans that call Earth their habitat and cannot live without its resources can meet their basic Human Rights and have dreams.

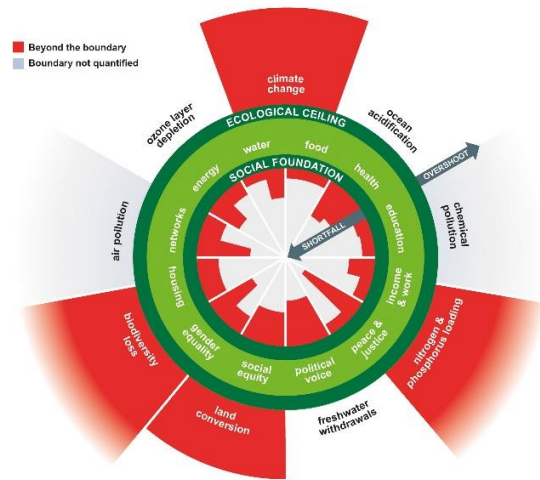


Figure 8 The Doughnut Economics, by Kate Raworth.

A Nobel Solution for a Dirty Problem

Last years’ [Economics Nobel](#) awarded Professor Nordhaus for a model that considers the economic impacts of climate change and provides cost-benefit analyses to policymakers looking for forecasting policy outcomes based on the different political options that can be taken. The author addresses the ineffectiveness of the current accords in place to reduce emissions and proposes a “Climate Club” for states to work together, where countries that do not adhere to a reduction target will be imposed a 3% tariff on its exportations to members. That would be redirected to fund the necessary internal costs of world economies trying to lower emissions.

The fundamental shift: from emergent response to resilience

The International Law of Disaster Relief (ILDR) is highly [fragmented](#) since there is no universal instrument for disaster relief. Determining the role and responsibility of States in offering and accepting assistance, the free movement of aid goods and workers, and ensuring the relief system is beneficial to the beneficiaries are some of the legal and regulatory issues that have been recently been the focus of the international community in the humanitarian crisis caused by natural forces. The current body of law, compared to the highly codified law of conflict (International Humanitarian Law), has a broad diversity of legal instruments that govern disasters. From bilateral to regional and universal formats, international soft-law agreements often leave or create overlaps, muddying the waters of application and further hindering enforceability and effectiveness.

Until recently they were limited by legal provisions that would concern the disaster response phase, but there has been real progress in modernizing disaster management legislation of other phases, including DRR and preparedness. Allocating responsibilities between government departments, improving early warning systems, raising awareness, and preparing communities for oncoming disasters is proof of [“the](#)

[fundamental shift to ensure that prevention is a priority](#)". ILDR is at a very exciting [evolutionary](#) place, if we keep exploring ways of enforcing strong legal frameworks, we can enable a community resilience environment where local authorities can ensure resources and capacity to meet civilians' needs in case of crisis.

A three-pronged approach

In conclusion, Climate Change is multiplying disasters that will have an effect on us all, directly and indirectly. By working together to increase resilience, chances are that we will be less vulnerable to the natural hazards. Governments together with the international community inject billions a year in aid to cure hunger, and every time there is a disaster costs go through the roof, so what if we start investing in planning and prevention instead? It is almost too late.

We need the States all over the world to start giving priority to DRR as a form of development. A three-tiered tactic is necessary to ensure efficiency: firstly, we must push for enforceable legal instruments which assimilate State strategies at the international level; secondly, government bodies must urgently shift to prevention and disaster risk reduction; and domestically we must learn from the Zambian example through emboldening the legal systems already in place that might be capable of holding corporations accountable for their nefarious practices. Since corporations are only responding to consumers' demands, this safe and just space between social and planetary boundaries can be achieved by conscious shopping, eating, traveling, working, voting, volunteering, and banking.

We all have a part to play. We have already started to feel the [consequences](#), and before 2030 pollution will reach disastrous levels. Despite not knowing how bad it will get, we need to be aware that Climate Change is very real, it concerns us all, and we must prepare.