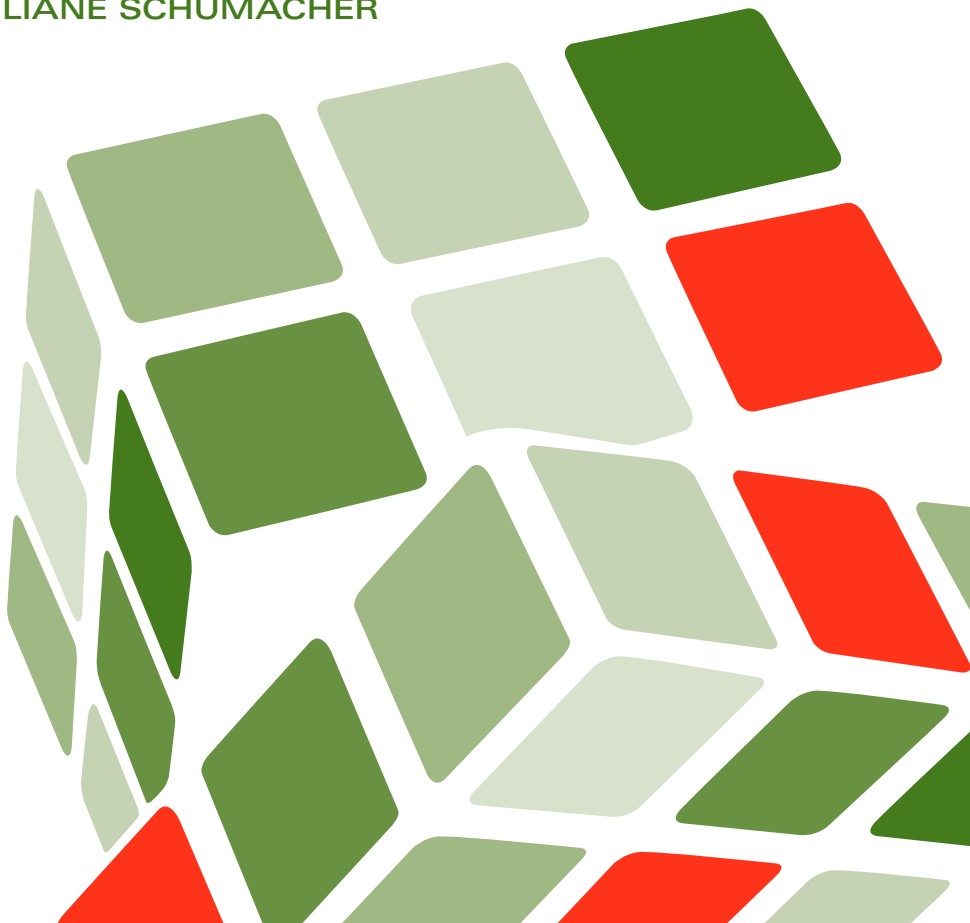


SUSTAINABILITY

CLIMATE DAMAGE

**THE WORLD IS DROWNING –
AND NO ONE WANTS TO PAY**

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INTRODUCTION: THE PARTY'S OVER ...

On 12 December 2015 at 7.26 pm cheering erupted at Le Bourget convention centre in Paris. Thousands of people hugged, posed for photos and clapped for several minutes on end. After two weeks of dramatic negotiations, the plenary session of the Climate Change Conference had adopted a new climate agreement. US Secretary of State John Kerry announced, 'It's a victory for all of the planet and for future generations,' while the Secretary-General of the United Nations promised, 'History will remember this day.' And French President François Hollande declared, 'In Paris, there have been many revolutions over the centuries. Today it is the most beautiful and the most peaceful revolution that has just been accomplished – a revolution for climate change.'

Just under a year later, the next Climate Change Conference was held in Marrakech, Morocco. A few days before it started, on 4 November 2016, the Paris Agreement entered into force, having been signed by the requisite number of states. However, early on in the conference something happened to put a damper on the mood of optimism: news broke that Donald Trump had been elected president of the USA. It came as a shock for many delegates and climate activists. Trump had repeatedly denied the existence of climate change and announced that if he won the election, the USA would pull out of the Paris Agreement.

In 2017, the USA did indeed announce its withdrawal from the treaty – but because this cannot happen for a few years, it is continuing to take part in negotiations for the time being. The concern that other

countries might follow suit has so far proved unfounded. However, there is still uncertainty: can climate policy succeed if the USA – the world's second largest polluter – is not on board?

With all eyes on the US president's erratic decisions, it is easy to lose sight of the fact that other urgent questions are looming for climate policy: the question, for instance, of how we can bridge the gap between the agreed target – lowering greenhouse gas emissions – and actual developments, which show that emissions are continuing to rise. At the same time, climate change has become harder to ignore over the past few years and months. Heavy tropical storms, extreme rainfall and summer heatwaves show that climate change is not a distant future scenario but something that requires adaptation measures to be taken now. We need to negotiate how this adaptation can be carried out successfully – and who will pay for it. Where will the EUR 100 billion come from – the sum that, according to the Paris Agreement, is to be available each year from 2020 onwards so that all countries, not just wealthy nations, can protect themselves and their inhabitants against the impacts of climate change?

And finally, there is the question of what to do about the damage caused by anthropogenic climate change. The climate change impacts that are already noticeable provide a taster of the changes and losses that global warming will bring. Climate protection measures, however ambitious, will not be able to prevent basic natural, social and cultural resources from being irretrievably lost. Neither will they stop swathes of land

or entire island states from sinking into the sea, or coral reefs from dying off, or prevent the salinization and drying out of arable land. Discussions have been running for several years now under the heading 'loss and damage' to decide who can be held accountable. The Paris Agreement is the first climate change agreement to include a separate article on loss and damage. It is a success for those most closely affected by rising sea levels, storms and droughts – and

an incentive to examine the concept more closely. It has been clear for some time that global warming can no longer be held in check and that humanity will have to find a way of dealing with the consequences. However, the 'loss and damage' concept also contains a question that is central to any climate policy: what is the point of a fair climate policy if those who have contributed the least to global warming suffer the most from its impacts?

NEGOTIATIONS: THE STATUS OF CLIMATE POLICY AFTER PARIS

The 2015 UN Climate Change Conference was held in Paris and on 12 December the delegates agreed on a new global climate treaty: the Paris Agreement. Politicians and the media celebrated the agreement and even vehement critics joined in with the infectious cheering. In the following weeks, tentative objections were raised by a few states in the Global South and by activists and scientists. The criticism did little to detract from the agreement's reputation – it retains an aura of 'historical breakthrough' and great success. But is the agreement really such an achievement? Or is it just a prettily packaged failure? What are the strengths and weaknesses of the Paris Agreement?

From a 'diplomacy' point of view, the Paris Agreement was definitely a success. A new, legally binding climate change agreement had been unthinkable in previous years. After all, it needed the approval of all 195 nations that are party to the Framework Convention on Climate Change.

Since the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992, the global Climate Change Conference has taken place every year, with thousands of representatives from member states attempting to agree on the next steps. Only once in all the years before the Paris summit did they succeed in adopting a legally binding climate agreement: the Kyoto Protocol, which was adopted in 1997 at the summit in Japan. In the Kyoto Protocol, the participating countries agreed to reduce greenhouse gas emissions by a fixed percentage each year between 2008 and 2012. But implementation of the Kyoto Protocol failed. Key states like the USA never ratified the protocol. China – which still counted as a developing country at the time – was not involved. A new climate agreement for the period after 2012 was supposed to be adopted at the 2009 climate summit in Copenhagen, but the summit ended in open confrontation and no results. It took years for climate policymakers to make

another attempt. In Paris they were finally successful.

With great diplomacy, the French conference managers succeeded in producing a text from the many drafts and objections which all the states were able to agree on. Even this consensus had an effect: it pushed the issue of climate change into the public eye and reinforced the fact that everyone agrees it is a key challenge for the international community. Voices that had previously disputed the existence of climate change or the fact that humans are responsible for it no longer had a role to play in Paris – and were likely to have difficulty finding a platform in the future too.

The Paris summit injected momentum into climate policy. The international agreement would officially enter into force when it was ratified by at least 55 countries that together accounted for at least 55 percent of global carbon dioxide emissions. In the case of the Kyoto Protocol, it had taken years and many concessions before this was achieved. The Paris Agreement obtained the number of ratifications it needed less than a year later, on 6 October 2016. The agreement entered into force on 4 November 2016 – before the following Climate Change Conference in Marrakech. In 2017, the last two countries ratified the agreement: Nicaragua and Syria.

However, US President Donald Trump, who took office in 2017, officially informed the United Nations in August 2017 of his intention to pull out of the agreement. For the moment, there are no direct consequences – apart from the symbolic impact. According to the terms of the agreement, no party can terminate it until three years after it has come into

force, in other words, November 2019. Because it then takes another year until the country can actually leave, the earliest this could happen would be 4 November 2020 – a day after the next presidential election in the USA, which might change the situation again. So, for the moment, the USA is still taking part in negotiations at the climate change conferences.

From a 'climate protection' point of view, Paris must actually be seen as a failure. Global warming as a physical principle is not much concerned with diplomatic success on paper. This is also the reason why some scientific observers shook their heads in dismay in reaction to news of the agreement in Paris. Because while the Paris Agreement ambitiously raised the aims and aspirations of climate policy, there is a huge gap between these aims and the measures actually agreed on. The best example here is temperature rise. Previously, the aim of international climate policy had been to restrict global warming to no more than two degrees above pre-industrial levels. In Paris, the global community changed this target to no more than 1.5°C. However, there are no specific measures to match this declaration of intent. On the contrary: whereas the Kyoto Protocol prescribed binding reduction targets for each state, the Paris Agreement contains only voluntary commitments – each state decides for itself by how much it intends to reduce emissions. However, the voluntary commitments that the states made before the conference are nowhere near enough to achieve the target of 1.5°C or 'even' the target of 2°C. Even if all the commitments were met in their entirety, the latest calculations (November 2017)

show they would lead to a temperature rise of around 3.2°C.¹

The broad consensus achieved for the Paris Agreement was possible in part because the wording of much of the text was kept very vague. It is usual during big conferences of this sort for resourceful lawyers to spend the final days of negotiations looking for wording that will satisfy all sides. For this reason, the Paris Agreement contains many nebulous passages, and deferred some critical points to future conferences. An aggravating factor in the area of climate policy in particular, is that many aspects are uncharted territory and there is no legal precedence or prior experience to fall back on.

And it is not just a matter of details. Article 5, for instance, contains the long-term objective of achieving a 'balance' from 2050 onwards between the carbon dioxide emitted into the atmosphere and its depletion – through take-up by plants and oceans, for instance, or by means of underground storage. To some extent, this reflects the original goal of decarbonisation – moving towards a society that will reduce its dependence on fossil fuels and aims for zero emissions in the long term. However, the balance described here can also be interpreted as the 'net-zero solution' that was also taken up recently by the Intergovernmental Panel on Climate Change (IPCC). In

this scenario, nations can continue to emit carbon dioxide provided they also develop solutions to store greenhouse gases, for instance through technologies like Bioenergy with Carbon Capture and Storage (BECCS), in which energy is obtained on a large scale from plants and the carbon dioxide produced is stored underground. These technologies are not yet ready to be used, are seen as risky and will reignite developments such as land grabbing, the large-scale purchase of land by big investors, which often leads to displacement and impoverishment of the local population and to environmental problems caused by large plantations. It is not clear whether technologies like BECCS can be formally used to offset carbon emissions. Similarly, controversy has for years surrounded the question of whether forests can count as carbon sinks and whether geoengineering – large-scale technology projects designed to slow global warming, such as space mirrors or inducing marine algal blooms on a large scale – should be permitted.

The Paris Agreement leaves plenty of wiggle room. The climate summits of the coming years, and the many conferences held between them, will continue to wrestle with the provisions – and only this will decide what form the climate agreement will finally take and whether it really is the first step on a path towards an effective, fairer climate policy.

¹ See Climate Action Tracker: 2100 Warming Projections, available at: <http://climateactiontracker.org/global.html>.

VULNERABILITIES: WHO IS (MOST) AFFECTED?

Anthropogenic climate change is not a distant future scenario. It is something that can already be measured and felt today. 2016 was the hottest year on record; 2017 was only slightly cooler, despite not having the additional heat boost caused by the El Niño phenomenon the previous year. The oceans were warmer in 2017 than in any other year. The spread of sea ice at the poles was smaller in March 2017 than at any other time. The effects of climate change have also become increasingly apparent in recent years.

These impacts can be divided into two types. Firstly, there are extreme weather events, such as storms, heavy rainfall and heatwaves. A higher temperature means more energy and evaporation, which brings higher wind speeds and greater volumes of water, which can in turn lead to heavy rainfall and flooding. Since several factors have to come together for a storm or heatwave and there are large natural fluctuations, such weather extremes are difficult to predict. In addition, it is not really possible to attribute an individual weather event to climate change with any degree of certainty. However, the probability – and therefore the frequency over the long term – of such extreme events are higher in a warmer climate. Consequently, the number of heatwaves in Europe, Asia and Australia has risen sharply over the past 50 years.² Measurements from Switzerland show an increase in heavy rainfall since the 1970s. Most climate models predict that the frequency of tropical storms in the highest categories (4 and 5) will increase as global temperatures rise. Weather data collected by

satellites since the 1970s confirms this trend. The increased number of strong hurricanes in 2017 also ties in with these predictions.

Furthermore, global warming is bringing about a number of ‘slow-onset’ events – environmental changes that develop gradually and can be predicted much more accurately. They sound much less dramatic at first, but over the long term, many of these developments will have much more serious consequences than extreme weather events. Of these slow-onset events caused by climate change, the one with the most far-reaching consequences is the rise in global sea level. Water expands as it gets warmer and the glaciers in the mountains and in the Antarctic are melting. These two effects combined are causing the sea level to rise. This process has been going on since the start of the 20th century, but has accelerated in recent years. Today, global sea level is rising at a rate of around 3.4 mm per year. The latest IPCC report anticipates that the sea level will rise by 28 cm to 98 cm by 2100, and potentially by one to three metres by 2300.³ This is already affecting low-lying islands like the Maldives and many Pacific islands that will no longer be habitable if there is even a slight rise in sea levels. In the long term, millions of people will be affected:

² IPCC – Intergovernmental Panel on Climate Change: Climate Change 2014. Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, Geneva 2014; see also Coumou, Dim/Robinson, Alexander: Historic and future increase in the global land area affected by monthly heat extremes, in: *Environmental Research Letters* 3/2013. This clustering of heatwaves would be extremely unlikely in a stable climate. ³ See IPCC – Intergovernmental Panel on Climate Change: Climate Change 2013. The Physical Science Basis. Working Group I Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge/ New York 2013.

a third of the world's population live in coastal areas and many major cities will either have to be protected at great expense or abandoned.

But it is not just the sea level that is rising – higher concentrations of carbon dioxide in the atmosphere mean more of it is dissolving in the sea. Warmer water also contains less oxygen. These two factors together are likely to have an impact on marine ecosystems and reduce catches in the fishing industry. A very high temperature rise of more than 2°C above pre-industrial levels can be expected to result in dwindling harvests for farmers. The scorching summer of 2018 has shown what that means: even in Germany there were massive crop failures. The areas most affected were those that were already dry, like Brandenburg, where 20 to 40 per cent of the harvest was lost for many crops. If the temperature rise is small to start with, scientists forecast different effects for different regions. While Northern Europe and Canada might benefit from warmer temperatures, many regions that are already battling periods of drought and heat will find it even harder to grow food.⁴ As is the case with agriculture, almost all climate change impacts affect people around the world in very unequal ways. Whether or not physical phenomena like wind, rain or heat turn into a 'disaster' depends not only on their intensity, but also on the people they affect and the conditions in which those people live. A storm surge that causes waters to rise to four or five metres above normal levels is an exceptional event even on the German and Dutch North Sea coast – but it is unlikely to cause serious damage, and lives will only be lost in very rare cases.⁵ The risk of storms and flooding

is no higher in Bangladesh than in the Netherlands – according to the World Risk Report published at regular intervals by the United Nations University and a consortium of aid organisations, the two countries are almost level in terms of this risk. The difference is the vulnerability of large sections of the population: in the Netherlands, for instance, well-developed infrastructure, an affluent population, functioning administration and effective disaster protection ensure that large-scale natural disasters are very unlikely. By contrast, in Bangladesh, flooding regularly causes thousands of deaths, while millions lose everything they own.

There have been many studies and discussions in recent years about the factors that determine how vulnerable people are to natural events. It is clear that there are a great number of contributing factors and that many of them overlap. The poorer a person or community is, the fewer options they have to protect themselves or react in exceptional circumstances. In addition, in many parts of the world, the poorest people live in the most precarious areas – in low-lying regions that are frequently flooded, for instance. Women are usually affected more than men because they normally have less money and, because they are responsible for looking after the family, are the first to feel the impacts of

⁴ See IPCC – Intergovernmental Panel on Climate Change: Climate Change 2014. Impacts, Adaptation, and Vulnerability. Part B: Regional Aspects. Working Group II Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge/New York 2014. ⁵ Although even here, this has only been the case in recent decades. In the Middle Ages, major storm surges regularly killed tens of thousands of people and whole swathes of land disappeared into the sea. Following the last devastating North Sea storm tides that caused thousands of deaths – in the Netherlands in 1953 and Germany in 1962 – massive investments were made in dykes and storm surge barriers, which are still maintained at great expense to this day.

drought or food shortages. But factors like age, health, education, religion, class or caste, and membership of a minority group also play a role.

However, focusing on these individual vulnerabilities masks the fact that it is not the people themselves who determine how much impact a natural event has on a region. People do not live in isolation and their resilience – their ability to withstand crises – is largely determined by the surrounding social conditions. A country's or region's infrastructure, for instance, determines the extent of the damage but also how quickly and effectively help can be given in an emergency. Institutions – including effective governments, welfare systems and insurance companies – play an important role in

determining whether people can survive an unforeseeable event and what losses will be incurred. Finally, the existence of supportive communities and social cohesion also plays a role. For instance, during the German floods of 1997, thousands of volunteers helped protect the dykes, alongside the technical relief organisations, the police and the armed forces. Conversely, racism and contempt for the poor and weak can have disastrous consequences in extreme situations. In the case of Hurricane Katrina, which devastated New Orleans in 2005, the government and the city's wealthier inhabitants largely abandoned the people in the low-lying areas – thousands died, and hundreds of thousands lost their homes.

LOSS: THE THINGS THAT CAN(NOT) BE FIXED

Whatever the outcome of future negotiations on the Paris Agreement and whatever its final form, one thing is clear: a rapid stop to global warming is not to be expected. The Paris Agreement, which is supposed to take effect from 2020 onwards, may set long-term directions for climate protection, but in the short term it will not bring about an effective reduction in emissions. And even in the unlikely event that emissions fall quickly, global warming will still continue for many more centuries because of the time it takes for carbon dioxide in the atmosphere to break down.

So it is no wonder that priorities have shifted for climate policy. Basically, we can distinguish between two approaches: in the first years after the Framework Convention on Climate

Change was adopted in 1992, the primary focus was on 'mitigation' – on what measures the global community can take to prevent or contain global warming. When it became clear that global warming is already happening and that it cannot be completely prevented however hard we try, greater focus was given to 'adaptation' – the question of how societies can adapt to climate change. Recently, a third approach has emerged: 'loss and damage' – the question of responsibility for climate-related loss and damage that cannot be prevented however much a society adapts.

This is not really a new topic. Back in the early 1990s, during negotiations on the Framework Convention on Climate Change, the Alliance of Small Island

States (AOSIS) asked for support and compensation for the land losses they are likely to suffer as a result of climate change. And this is not an isolated issue – it is closely linked to the debate about climate justice, because those affected by climate change losses did not cause them. Western nations have been using fossil fuels for 150 years. They owe part of their current prosperity to their use of fossil fuels. And even now that emerging economies like China and Brazil have caught up and are among the world's largest emitters of greenhouse gases, national contributions to climate change are very unevenly distributed: in 2014, annual per-capita carbon dioxide emissions were 16.5 tonnes in the USA and 8.9 tonnes in Germany, but 1.7 tonnes in India and just 0.1 tonnes in Ethiopia.

Since climate policy negotiations first began, nations in the Global South have been bringing this point up and insisting that the rich states of the North take responsibility. This has to some extent been taken into account in climate policy agreements in the past, for instance with countries of the industrial North committing first to a sharp reduction in emissions, while emerging economies and nations of the Global South are permitted a further increase in emissions, or a later reduction.⁶ At the summit in Copenhagen in 2009, the states agreed to set up the Green Climate Fund (GCF). It will receive payments primarily from the industrialised nations, while the poorer states of the Global South can use the funds to finance climate protection and adaptation measures. From 2020 onwards, the agreement is for the GCF to make EUR 100 billion available each year. There are two problems: one is that this

money will not be enough – a study by the United Nations Environment Programme (UNEP) calculated that the annual costs of adapting to climate change in the countries of the Global South could be between EUR 140 billion and EUR 300 billion by 2030, and up to EUR 500 billion by 2050.⁷ Another problem concerns the environmental impacts that cannot be prevented.

If sea level rises, coastal areas and entire island nations will sink into the sea. What will happen to the people who live there and lose their land? What are countries that lose their national territory in this way supposed to do? Salinization and droughts will make agriculture in many parts of the world harder or impossible. Who will pay for these losses and the follow-up costs? Who will take in the people who may be forced to emigrate to other countries as a result of these developments? Higher temperatures will lead to the extinction of species and the permanent destruction of sensitive ecosystems like coral reefs, which have formed over thousands of years. If it is possible to identify a party responsible for this environmental damage, how can they be held to account? And what compensation can be demanded?

These questions were raised for the first time at the 2007 climate summit in Bali under the heading 'loss and damage'. The representatives of island nations threatened with or already affected by

⁶ Accordingly, the Kyoto Protocol divided the states into two groups: Annex I countries (industrial nations, listed in Annex I of the Framework Convention on Climate Change), which commit to reducing their greenhouse gas emissions, and states not listed in the Annex, which are therefore not obliged to reduce their emissions. There are also a few special cases. ⁷ UNEP – United Nations Environment Programme: Adaptation Finance Gap Report 2016. United Nations Environment Programme, Rotterdam 2016, available at [www.unepdtu.org/-/media/Sites/Unepriose/News%20Item%20\(pdf\)s/UNEP-GAP-report-2016_web-6_6_2016.ashx?la=da](http://www.unepdtu.org/-/media/Sites/Unepriose/News%20Item%20(pdf)s/UNEP-GAP-report-2016_web-6_6_2016.ashx?la=da).

flooding had pushed for these issues to be discussed, along with the group of Least Developed Countries (LDCs). They received support from a number of active non-government organisations (NGOs). At the 2010 summit in Cancún, Mexico, a separate working group was set up to look at this issue. In Warsaw in 2013 it was turned into a dedicated mechanism under the Framework Convention on Climate Change, with the clunky name Warsaw International Mechanism for Loss and Damage Associated with Climate Change Impacts (WIM). Its aim was to clarify important aspects of this issue by 2016. In particular, its mission is to collect data, define the concept more clearly and draw up a working plan for this period. The working plan was finally adopted at the Bonn summit – but many aspects are still undecided. The tricky question of who should finance protection against loss was left open. Instead, a working group is to draw up proposals in 2018 for ways of limiting migration associated with the impacts of climate change – an issue that is currently far more important than climate justice to the countries of the Global North.

So there are lots of questions that still need to be clarified over the coming years. These include, for example, the important task of defining what is meant by loss and damage. The line between this and adaptation is not as clear-cut as it appears at first glance, and so far there is no uniform definition of loss and damage. The United Nations, which is providing the framework for negotiations about loss and damage, talks about 'the actual and/or potential manifestation of impacts associated with climate change in developing countries that negatively affect human and natural systems'.⁸

From this we can see that loss and damage is a very broad concept. At the moment, attempts to understand and negotiate loss and damage can be roughly divided into four different approaches:

(1) The first approach refers to the vulnerability of the global climate system and global ecosystems by showing that climate change is already causing loss and damage and that natural and cultural assets are being irretrievably destroyed. This can be understood in a political or moral sense – for instance, by calling on the international community to make greater efforts to protect the climate. The distinction usually made here between loss and damage is that damage is defined as reparable, and loss as permanent and irreversible. A house roof destroyed in a storm can be rebuilt; an extinct animal or plant species is lost forever.

(2) The second approach also describes the impacts of climate change, but primarily from an economic perspective. It is about estimating or calculating the loss and damage caused by climate change. Here, damage is understood as the physical impact, and loss as the cost. The damage would be the ruined roof; the loss would be the USD 100 it costs to repair it. This is important both for insurance firms and for governments, who are calculating how expensive climate change might be. In this context, loss and damage is described as a 'third cost element' of climate change, alongside costs for climate protection and adaptation.

⁸ UNFCCC: Warsaw International Mechanism for Loss and Damage, available at: <https://unfccc.int/topics/adaptation-and-resilience/workstreams/loss-and-damage-ld/warsaw-international-mechanism-for-loss-and-damage>.

(3) The third approach has a technical and practical focus. It is about taking a closer look at potential loss and damage to optimise adaptation and minimise risks. This approach stems from disaster relief and has adopted many of the tools used in this sector. Although data from climate models is incorporated for prevention and risk assessment purposes, in principle this approach makes use of proven concepts from other areas – ones that have been effective when dealing with hurricanes, floods and earthquakes, for example. Although climate change can increase the intensity or frequency of extreme weather events, when it comes to providing practical assistance on the

ground, it is irrelevant whether a flood was caused by anthropogenic global warming or natural variations in the climate system.

(4) The fourth approach can be seen as a political and legal one. Its objective is to claim compensation in relation to loss and damage. This is the really new aspect that has been brought into climate negotiations and is also the one that is most closely linked to issues of justice. The island nations and LDCs have been pushing this issue in discussions over recent years. They argue that they are entitled to compensation for loss and damage caused by climate change from the countries or organisations responsible for it.

TREATIES: LOSS AND DAMAGE IN THE PARIS AGREEMENT

The inclusion of the loss and damage concept in the Paris Agreement has given this topic a huge boost. It is likely to receive more public attention over the coming years and to be fleshed out in greater detail. This is a great success for those championing the cause. For a long time, it was by no means clear that it would actually form part of the international agreement. The Warsaw Mechanism, which has been working on this issue since 2013, was considered to be underfunded and, for a long time, it was unclear whether it would continue to exist after presenting its final report in 2016. The industrial nations in particular were reluctant to mention loss and damage explicitly in a new climate agreement. And not without cause: they feared they would

be called to account for it, either directly or indirectly. In addition, because of the different meanings associated with loss and damage, there was often confusion about the concept's proper place within the agreement. Whereas the countries of the South were concentrating primarily on the legal angle, and arguing that it was a new aspect that should be considered as a separate pillar alongside mitigation and adaptation, other groups of states countered that the points in question were part of the discussion about adaptation and did not need to be mentioned separately. In addition, fears were repeatedly expressed that because of the breadth of the concept in its current form, there would be overlaps with the tasks of other international organisations, entailing unnecessary costs and friction

losses. This applies, for instance, to the issue of climate refugees, which comes up in the context of loss and damage, for which the UN Refugee Agency is also responsible, and to the field of disaster relief, where various international groups are already attempting to coordinate efforts.

Article 8 of the Paris Agreement therefore states at the outset that all activities relating to loss and damage associated with climate change will be carried out with the international organisations responsible. This secured the existence of the Warsaw Mechanism beyond 2016. The relevant conference decision assigns two tasks to the Warsaw Mechanism: firstly, it is to develop further risk management and insurance measures to address loss and damage associated with the adverse effects of climate change. The emphasis here is on a technical and practical understanding of loss and damage. Secondly, the Warsaw Mechanism is to develop recommendations regarding climate displacement. The draft agreement had called for a separate institution to be set up to deal with climate refugees. Since 2008, an average of 26.4 million people have been forced to leave their homes each year as a result of natural disasters.⁹ And the UN Refugee Agency is not the only organisation to assume that these

figures will increase as temperatures rise. The planned reference to a climate refugee body was eventually dropped from the agreement, mainly as a result of pressure from Australia. Climate displacement is a sensitive subject. The industrial nations have been trying to keep it out of international negotiations for a long time because they fear they will be setting a precedent if they recognise global warming as a justification for fleeing a country.

Finally, the Paris Agreement also mentions the issue of compensation, but in a very different form than was expected or hoped for by many of the countries in the South. A concluding sentence clarifies that the inclusion of loss and damage in the Paris Agreement 'does not involve or provide a basis for any liability or compensation'. The industrialised nations, especially the USA, intended this clause to prevent the mention of loss and damage from forming a legal basis for compensation claims. The sums involved are huge. Estimates of the costs of loss and damage associated with climate change that are already unavoidable range from USD 100 billion to USD 400 billion per year until 2030.¹⁰ However, in trying to rule out compensation payments the USA has unintentionally drawn attention to the very topic it was trying to avoid.

⁹ See the information on the website of the Internal Displacement Monitoring Centre (IDMC) available at: www.internal-displacement.org/publications/2015/global-estimates-2015-people-displaced-by-disasters. ¹⁰ As expected, since there is no clear definition of loss and damage, the figures vary wildly. However, even the lowest calculations put the cost of loss and damage in the LDCs alone at around USD 100 billion per year until 2030, and USD 200 billion per year until 2050. Climate Action Tracker, a website funded by the European Climate Foundation, puts the costs at USD 400 billion per year until 2030, and more than a trillion US dollars per year until 2050.

The inclusion of loss and damage in the Paris Agreement established it permanently as a third pillar of climate policy. Should this be seen as a success for all those who are fighting for more justice in the context of global warming?

The answer depends on how the concept develops in future and which players dominate the process. Just as the Paris Agreement is to be seen as a framework to be filled with content over the coming years, the inclusion of loss and damage is not a final agreement, but marks the start of discussions on this issue.

However, developments in the negotiations since Paris offer little room for hope. The climate conference held in Bonn in November 2017 was chaired by Fiji – an island nation in the Pacific that is already sustaining substantial losses as a result of the effects of climate change. This encouraged the hope that the conference might give a boost to the issue of loss and damage. These expectations were not met, thanks to Western states, especially the USA and the European Union, which blocked every advance – not only in relation to loss and damage, but in any area concerning specific funding commitments. The only development they agreed to in relation to loss and damage was the start of an ‘expert dialogue’ on the subject of financing. So although at the end of the conference a working plan was adopted for the Warsaw Mechanism for the next few years, there are no funding commitments for the mechanism, which means it remains underfunded and has no means or prospects of actually being able to provide compensation for irreparable damage or losses associated

with climate change. Until now, a relatively small group of states, NGOs and aid organisations have shaped the way in which the concept has been formulated, and the Warsaw Mechanism itself consists of only a small group of experts.

Nevertheless, activities in the area of loss and damage associated with climate change are not restricted to the United Nations climate change negotiations. The breadth of the loss and damage concept means it is connected to a range of international developments and initiatives that will influence how it develops in the future. On the one hand, attempts are being made at various levels to hold those responsible for global warming – states in the North and/or corporations – liable and to demand compensation for the loss and damage they have caused. This is undoubtedly one reason why the industrialised nations wanted to keep this aspect out of the Paris Agreement: claims are already a possibility. There are a whole range of principles in international and civil law that could apply to loss and damage caused by global warming. These include the polluter pays principle, a fundamental tenet of environmental law in the USA and Europe, according to which the person or organisation responsible for environmental damage must pay the cost, and the principle enshrined in international law that requires states to refrain from any activity that causes injury to the territory or environment of another state. The relevant clause in the Paris Agreement does not rule out such lawsuits in the future – something lawyers were quick to point out. Existing

legislation cannot be repealed by agreements of this kind.¹¹

In November 2015, for instance, Saúl Luciano Lliuya, a small-scale farmer in Peru, brought a case against energy giant RWE with the help of the NGO German-watch. His village is at risk of being swept away by water from a melting glacier. Since, according to studies, RWE shares a substantial portion of the blame for global warming, Lliuya is demanding EUR 20,000 in compensation to pay for flood defences in his village. The regional court in Essen dismissed the case. However, Lliuya appealed – and was successful. In November 2017, the higher regional court in Hamm ruled that the case was admissible and that the evidence should be heard. This is a ruling that could have far-reaching consequences for legal claims for climate justice because the court has already made it clear in the oral proceedings that those responsible for climate change are also responsible for its impacts. Now, during the hearing of evidence, the plaintiff's experts will have to prove that there is actually a connection between the melting glacier in Peru and the actions of the RWE corporation.

This case can – and should – serve as an example that it is possible to call to account the biggest beneficiaries of climate change. Research on 'carbon majors' has shown that just 90 organisations – private and public bodies and state-owned companies – are responsible for two-thirds of the carbon dioxide emitted to date.¹² The case of the Peruvian farmer has been cleverly chosen because there is clear scientific evidence linking melting glaciers and rising sea level to the rise in global temperatures.

In the case of extreme weather events, it is harder to pinpoint the cause of indi-

vidual events. But even here, there are legal means available, as recent cases have shown: in the Philippines, victims of Typhoon Haiyan, which wreaked havoc on the islands in 2013, submitted a petition to the national Human Rights Commission in December 2015, with the help of environmental organisations. The commission set in motion one of the most comprehensive investigations to date into the climate crimes of major oil and gas corporations.¹³ In the USA, children and young people, supported by Our Children's Trust, have brought a lawsuit against the US government, accusing it of not doing enough to prevent climate change, and a court has already ruled partially in their favour.¹⁴ At best, lawsuits like these have a number of effects: they create publicity and make it clear who is responsible for loss and damage associated with climate change. They win money – if they are successful – that can help pay for adaptations to changing environmental conditions or reduce the losses suffered by those affected. If the damage payments and court costs are high enough, they can reduce corporate earnings and make climate-damaging investments less profitable. They strengthen the position

¹¹ See Sharma, Anju et al.: *Pocket Guide to the Paris Agreement*, Oxford 2016, available at: www.eurocapacity.org/downloads/PocketGuide-Digital.pdf. ¹² See Heede, Richard: *Tracing anthropogenic carbon dioxide and methane emissions to fossil fuel and cement producers, 1854–2010*, in: *Climatic Change* 1/2014, p. 229–241; see also <http://carbonmajors.org>. ¹³ Fuhr, Lili: *Fossile Konzerne müssen sich vor nationaler Menschenrechtskommission in den Philippinen verantworten* (Fossil fuel companies to answer to national human rights commission in the Philippines), *Klima der Gerechtigkeit*, 23 August 2016, available at: <http://klima-der-gerechtigkeit.de/2016/08/23/fossile-konzerne-muessen-sich-vor-nationaler-menschenrechtskommission-in-den-philippinen-verantworten/>. ¹⁴ For a comprehensive overview of ongoing and possible future lawsuits linked to climate justice, see: Boom, Keely/Richards, Julie-Anne/Leonard, Stephen: *Climate Justice. The International Momentum Towards Climate Litigation*, published by the Climate Justice Programme 2016, available at: <http://admin.indiaenvironmentportal.org.in/files/file/Report-Climata-Justice-2016.pdf>.

of those who suffer most from the consequences of climate change – enforcing rights is not the same as asking for help. They also put pressure on policymakers to take concrete action – and can therefore be part of a strategy of lobbying rulers ‘from below’, creating and broadening the scope for action. Since the election of Donald Trump, litigation against planned legislation or in pursuit of more far-reaching climate protection measures has been an important strategy in the USA to prevent the new president from undoing overnight everything that has been achieved so far in the area of climate protection and environmental conservation.

Ultimately, a key factor is how such lawsuits and claims are embedded in a political strategy – to avoid reducing issues or making them one-sided. In particular, framing the issue as a conflict between poorer nations and industrialised ones, as is customary in the context of loss and damage at international level, only works in certain cases, for instance with regard to low-lying island nations. On a global level it is problematic because differences in the extent of contributions to climate change vary more within the population of a single country than between countries. Even in China, India and Bangladesh there is a class that lives in air-conditioned homes, drives SUVs and jets around the globe, while the sections of the population in the USA and in (Southern) Europe that were literally left on the streets during the latest crises, hardly benefit at all from the wealth that corporations generate in their countries or around the world at the expense of the environment. Taking account of this fragmentation of societies – in the North and South alike – is a first important point

when it comes to forging global alliances for climate justice.

In the area of funding, numerous proposals have been made in recent years that go beyond simply paying compensation for past actions – and also set the course for a more climate-friendly future. One such proposal is a global tax on mining or burning fossil fuels. This would make fossil fuels more expensive and unattractive in the long term; what is more, the money raised could be used for adaptations to climate change and to promote a more sustainable economy. The same applies to the huge sums that governments currently spend on subsidising companies: oil and gas corporations receive USD 5.3 trillion each year in subsidies, as revealed in a study by the International Monetary Fund (IMF).¹⁵ According to the IMF, eliminating subsidies would cut carbon dioxide emissions by 20 per cent and could increase protection for those most affected by climate change.

That is, provided the money reaches those who actually need it. An important aspect, besides the need for new funds, is who will manage them and who they should actually be paid out to. One of the implementation organisations authorised to call on funds from the Green Climate Fund, for instance, is Deutsche Bank. So how can we ensure that the money actually reaches those who need it, and is not simply used to implement more neoliberal projects that will primarily benefit the elites?

Another important aspect of loss and damage concerns insurance companies.

¹⁵ See Coady, David et al.: How Large Are Global Energy Subsidies? IMF Working Paper, published by International Monetary Fund, Washington 2015, available at: www.imf.org/external/pubs/ft/wp/2015/wp15105.pdf.

The fact that the insurance model is mentioned prominently in Article 8 of the Paris Agreement is not a result of efforts by those affected by climate-related loss and damage, but a response to demands by the European states, in particular Germany. In recent years, many corporations have started getting actively involved in global climate negotiations, supporting conferences and congresses, and financing studies and publications. Major insurance companies like Allianz and Munich Re, one of the world's largest reinsurance companies, are very active in this process. Insurance companies understandably have an interest in maximising the accuracy of information about the future probability of loss and damage. But they also have an interest in selling their policies. Munich Re and the Munich Climate Insurance Initiative (MCII) it set up are partners in the InsuResilience initiative, a programme established by the German government during its presidency of the G7, the annual meeting of the seven largest advanced economies. The MCII was presented at the G7 summit in Elmau in June 2015. At the 2017 climate summit in Bonn, this initiative was the only point in the area of loss and damage on which progress was made. The aim of the initiative is to increase the number of people in the Global South who are insured against climate-related loss and damage by up to 400 million by 2020. Both indirect and direct insurance policies are possible. Indirect insurance means that governments take out insurance against extreme events. In an emergency, they do not need to provide evidence of loss or damage, but immediately receive a sum of money if certain limits are exceeded. These might include wind speed, in

the case of a hurricane, or rainfall levels in the case of torrential rain. The idea is to eliminate the drawn-out process of providing evidence, which is otherwise required for insurance claims. In the event of a claim, the insurance companies pay out immediately so that money is available to pay for relief measures – a big advantage compared with waiting for aid from international budgets.

In the case of direct insurance, citizens take out insurance themselves. For instance, two-thirds of German farmers have insurance that will pay out for harvest losses caused by hail. In many countries of Southern Europe it is also common for farmers to take out insurance against loss and damage caused by drought, often with the help of government subsidies.¹⁶ In the same vein, small-scale farmers, small businesses and homeowners in countries of the Global South are now to be given access to these kinds of insurance policies. The Paris climate summit was particularly successful in terms of the InsuResilience initiative: the G7 countries committed to make USD 420 million available immediately – not to help those affected by climate-related loss and damage, but to develop new insurance products. The website of the Federal Ministry for Economic Cooperation and Development (BMZ) states that a condition for the initiative's success is 'to create a low-cost institutional and regulatory framework for insurance markets in

¹⁶ In Germany, by contrast, insurance against drought damage has not been usual because these kinds of events have been rare until now and the insurance premiums are very high – this is one reason why several German states stepped in during the 2018 heatwave to promise compensation payments to farmers who suffered high drought-related losses, see https://www.deutschlandfunk.de/hitzewelle-warum-kaum-ein-landwirt-gegen-duerreschaeden.3669.de.html?dram:article_id=424254.

the countries affected'. It is also intended to create incentives for private investments in the insurance sector.¹⁷

So the idea is to create new markets for the (German) insurance industry. The costs of loss and damage caused by climate change will then be borne by those affected – via their insurance premiums. The only winners in this scenario are likely to be the insurance companies, which will capture the lucrative microinsurance market. According to the Microinsurance Network, this market is the new big thing in development cooperation after the boom in microfinance, with demand having risen by ten per cent in recent years.

Insurance and prevention make a great deal of sense, in principle, but there needs to be enough knowledge and transparency to ensure that potential

customers can assess the probability of an insured event occurring and work out whether insurance is worthwhile for them. In addition, they have to have sufficient income to pay for insurance cover for emergencies on top of their everyday expenses – and this is not the case in many of the poorest countries and regions affected by the impacts of global warming. Microfinance has already shown us where this leads: once lauded as a miracle cure for poverty, instead of reducing poverty, it has made big profits for the banks – and plunged many of the poorest people deep into debt.¹⁸ In any case, one could ask why those affected should pay the premiums – wouldn't it make sense to demand that insurance premiums be paid by the industrialised nations, which are, after all, responsible for climate change and the associated loss and damage?

OUTLOOK: BEYOND LOSS AND DAMAGE

People in many countries of the Global South are particularly vulnerable to the impacts of climate change because, as in other parts of the world, state support and welfare systems have seen drastic cuts over the past 20 years – frequently in response to pressure from industrialised nations as part of 'structural adjustment programmes'. The growing divide between rich and poor and the loss of hard-won social rights has made whole swathes of the populations in the South, but also in many Northern countries, more vulnerable to natural disasters. Relief and support networks have been dismantled and what was previously seen as a government responsibility is to

be financed in future by those affected. This is as cynical as the fact that big corporations are taking advantage of the destruction and misery caused by climate change because they see these

¹⁷ See Federal Ministry for Economic Cooperation and Development (BMZ): G7-Konferenz zu Klimarisikoversicherungen (G7 conference on climate risk insurance), 7 May 2015, available at: www.bmz.de/g7/de/aktuelles/150507_G7-Konferenz-zu-Klimarisikoversicherungen/index.html.

¹⁸ See e.g. for South Africa: Bateman, Milford: Microcredit has been a disaster for the poorest in South Africa, in: *The Guardian*, 19 November 2013, available at: www.theguardian.com/global-development-professionals-network/2013/nov/19/microcreditsouth-africa-loans-disaster; in India and Bangladesh a link has also been made between a number of suicides and microfinance, see Biswas, Soutik: India's microfinance suicide epidemic, in: *BBC News*, 16 December 2010, available at: www.bbc.com/news/world-southasia-11997571; Burke, Jason: Impoverished Indian families caught in deadly spiral of microfinance debt, in: *The Guardian*, 31 January 2011, available at: www.theguardian.com/world/2011/jan/31/india-microfinance-debt-struggle-suicide.

exceptional situations as a lucrative field for new investments and services.

The impacts of climate change and of neoliberal economic policy reinforce each other. Keeping track of these interrelationships is a second important task in the battle for climate justice: a society's resilience to threats, including the impacts of climate change, is not increased by defensive walls but by social and equitable policies.

Ultimately, when it comes to loss and damage, it is important not to inadvertently support a development that has been apparent for several years now: international climate policy is becoming a powerful instrument promoting the monetisation, classification and, ultimately, the commodification of nature. This is certainly more obvious in the case of emissions trading or payment for ecosystem services. But demands for (justified) compensation and the expansion of insurance practices with their comprehensive network of calculations also speed up the classification and monetisation of ecosystems – and, at the end of the day, these are the conditions for incorporating sectors into the capitalist system that have until now not been included in the calculation. We need to counteract this development and make it clear that not everything can be expressed in monetary terms; that a place, a custom, a memory, the

existence of a living creature or the life of a human being cannot be offset with money – and that, ultimately, it is not about making those responsible pay for their actions, but motivating them to refrain from such actions in the future. Many suggestions have been put forward over recent years that point in this direction.

The real aim must be to fight for measures that can actually mitigate climate change and increase resilience. To fight for fossil fuels to remain in the ground and for transport and agriculture to be radically restructured. To fight to kickstart a transformation towards a different kind of economy that protects the Earth and makes societies in the North and South more equitable – not just in terms of climate change.

In places where aspects of loss and damage are helping to launch this kind of transformation, they can be an effective instrument for more climate justice – but a great deal more effort will be required in the coming years to hone the concept in pursuit of this goal.

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‘International climate policy has become a powerful instrument promoting the monetisation, classification and, ultimately, the commodification of nature. Can the concept of climate-related loss and damage, which is incorporated in an article in the Paris Agreement, make a difference? Or does it, in fact, encourage this development?’

JULIANE SCHUMACHER

