



3 Degrees More

The Impending Hot Season and
How Nature can Help us Prevent it

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Summary

In August 2022, an appeal by distinguished climatologists around lead author Luke Kemp was published in the renowned scientific journal "The Proceedings of the National Academy of Sciences" (PNAS) under the title "Climate Endgame". The article accused the Intergovernmental Panel on Climate Change (IPCC) of not having dealt with the **consequences of a global warming of +3°C**, which we are heading for unless we make dramatic course corrections: "Facing a future of accelerating climate change while blind to worst-case scenarios is naive risk management at best and fatally foolish at worst". The authors call for a special report on this topic.

A few weeks earlier, the book I edited, "3 DEGREES MORE", was published, which deals precisely with these topics. Scientists from various disciplines review the consequences of such a hot period. An average warming of the near-Earth atmosphere of +3°C means that it will be up to 6°C hotter on land, because many land areas are warming about twice as fast as the global mean, 70 per cent of which is made up of ocean temperatures.

This, together with the increasing evaporation over the oceans and the increased energy in the atmosphere, is leading to an extreme radicalisation of weather patterns with devastating consequences for all of humanity as well as biodiversity.

Above all, global agriculture will be massively affected: heavy rainfall accompanied by storms with wind speeds of more than 250 km/h, nationwide flooding, extreme droughts and increased soil erosion will lead to ever greater crop failures.

Economic damage will also increase dramatically and eventually exceed 10 per cent of the world's annual social product (around US\$ 100 trillion in 2022). Recurring destruction of global infrastructures and residential and commercial buildings, as well as the associated ongoing disruption of supply chains, will then bring even the global economy to the brink of collapse.

Global warming of up to +6°C on land leads to a massive increase in heat deaths every year, makes entire regions of our globe uninhabitable and inevitably causes hundreds of millions of climate refugees worldwide. The sum of these consequences means that countless people will starve to death, die of

thirst or lose their lives in armed conflicts over dwindling resources, and societies around the globe will have reached the limits of their adaptive capacity.

We must never allow such a scenario to happen

The majority of voters are not yet aware of these consequences of unchecked climate change. But probably also the majority of decision-makers in politics and business have not yet seriously considered the consequences of global warming of +3°C or have dramatically underestimated them. That the efforts made so far have been completely insufficient is shown not least by the fact that the CO₂ increase in the atmosphere is steeper than ever before (3.00 ppm in the last 12 months).

The scientists in my book show that we still have it in our power to limit global warming to at no more than 2°C. The prerequisite, however, is that the Paris climate treaty be improved and supplemented. In its current form, it is not capable of correcting the failed climate protection policy of the last two decades and at the same time mastering new challenges such as the further increase in the world population by two billion people and the liberation of another two to three billion people from poverty in the emerging and developing countries through the increased use of resources and energy.

The three most important improvements or additions to the Paris climate treaty would be:

1) **Educating civil society**, i.e. stimulating an indispensable science-based discourse on the consequences of global warming of +3°C. The devastating consequences of the increase in global warming are not linear, but exponential. A "3-degree world" is therefore completely different from a "1.5-degree world". For far too long, only the consequences of a global warming of +1.5°C to +2°C have been presented in the media. The melting of the glaciers or the Greenland ice, the partial flooding of Bangladesh or the rise in sea levels may cause consternation, but they are not a serious threat to the whole of humanity.

A public discourse on the true dangers of a warming of +3°C has not been held so far. This is also confirmed by Greta Thunberg in her anthology "The Climate Book", published in 2022. She warns that there is only hope if we tell the truth and calls on the media to do their part, given the magnitude of our task and the time left to act. In my opinion, climate justice must also be addressed in this discourse.

2) An **agreement on sufficient financing for future climate protection measures** means organising the political will to make sufficient financial resources available every year for the next two decades. According to estimates by renowned economists (including Nicholas Stern), the global community will have to invest at least two percent of GDP annually in climate protection policy. These expenditures must be raised neither through general tax increases nor through further indebtedness of the states. They must be at the expense of the one percent of the world's population who have been able to build up their wealth through the use of fossil based energies for decades without bearing the ecologically true costs.

Two specific types of taxes are essentially suitable to finance the future considerable annual investments in climate protection, especially since they are significant both in terms of their volume and allow for a necessary social correction: **the financial transaction tax and the inheritance tax**. Both taxes should flow into a new sovereign fund to be established, which would be used exclusively for climate and infrastructure investments.

3) **Adding nature-based solutions to the Paris Climate Agreement**. These are measures that directly avoid CO₂ emissions or absorb the CO₂ already stored in the atmosphere (negative emissions). Their advantage: they can be implemented promptly, are socially compatible and relatively inexpensive.

First and foremost, a stop to the deforestation of the rainforests must be ensured. This step alone would reduce global CO₂ emissions by almost 5 billion tonnes per year - more than Europe emits annually - and at the same time set a milestone in terms of biodiversity conservation. In addition, we need the reforestation of 350 billion trees in the tropics and subtropics, a rewetting of the drained world moors, humus enrichment in the soils as a climate-relevant carbon sink, and a turnaround in the construction sector as far as possible towards a return to sustainable timber construction. In the medium and long term, nature-based solutions can improve the global CO₂ balance by up to 25% annually, or 10 billion tonnes. The global cost of all nature-based solutions would be between US\$ 200 and 300 billion annually for the next 20 years, or 20-30 euros per tonne of CO₂.

Climate policy needs a new global "signal of departure" that shows that progress is really being made

Such a milestone would be a binding agreement under international law with the developing and emerging countries to stop deforestation of the rainforests within the next three to four years, including compensation payments for their loss of yield (approx. 45 billion US\$ annually). Global CO₂ emissions would thus be reduced as drastically as if Europe were to become climate neutral by 2026 at the latest. Realising a comparable step - a reduction of 5 billion tonnes of CO₂ emissions in addition to the planned measures of the climate treaty - through the global economy requires a multiple of time, is much more expensive and is politically hardly enforceable.

Call to action

The global community has agreed to achieve global climate neutrality by 2050.

However, politicians will only initiate the necessary measures on a sufficient scale and at a sufficient pace when the vast majority of the population becomes aware of how much a "3-degree world" will change and threaten people's lives in an unprecedented dimension. An enlightened civil society is needed to support the drastic measures and sums needed to limit global warming to +1.5°C to a maximum of +2°C. Without a timely and intensive discourse between politicians and citizens - similar to the Corona crisis - there will be no broad-based support. Therefore, a comprehensive information campaign by politicians and the media is needed to show people what options we have for overcoming the climate crisis.

Mankind must be clear about one thing: Either we as a global community are prepared to invest at least 2% of the world`s social product annually in climate protection by 2050, which is equivalent to the sum of all military budgets today, or we will pay many times over for the unimaginably high damage caused by the consequences of climate change later on, if there are any functioning societies left at all.

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