The Jus Semper Global Alliance

In Pursuit of the People and Planet Paradigm

Sustainable Human Development

March 2024 COMMENTARY ON TRUE DEMOCRACY AND CAPITALISM

The end of seasons?

Extreme temperatures and events such as Hurricane Daniel tell us we are approaching a point of no return. There is a good chance that in 2023, we will exceed the 1.5°C limit [and we have exceeded it].

Juan Bordera – Antonio Turiel

He who by chance stops the world will be its saviour - Émile Zola

We take such pride in our enormous technical advances that we have formed a kind of dogma: technology will always come to the rescue of progress. But we hardly want to face an increasingly evident feeling. This locomotive of history we are travelling in is more like a bullet train, and it is going so fast that there are hardly any stations left for nature and all of us on it to stop at. We are already feeling it: in our sweaty skin, in the tropical sleepless nights that go on forever, in the crop failures that drive up the cost of living, in the fires, floods, hurricanes and hailstorms that are getting stronger and more frequent. And this is only the beginning. We have stepped so far on the gas that the atmosphere is becoming unbreathable, and the four seasons are already looking like two. The bullet train is taking on an increasingly perverse double meaning.

The streets of Larissa, Greece, completely flooded after the passage of storm Daniel. / Wikimedia Commons

More wood. More coal. More oil. More minerals, even if there are not enough to go around. More and faster. More progress and, of course, more growth. Always. To infinity. Consequently, anomalies and extreme phenomena are also increasing. And now September is already another month of summer. And October is on its way to becoming one, too.

The climate situation on the planet is anything but ordinary.

September was a month that history can only point to and remember from an unforgettable 2023. In Libya, storm Daniel, which became an actual Mediterranean hurricane because it crossed an area of abnormally warm water, dumped so much water in the middle of the Sahara desert that nearly 10,000 people perished in the resulting floods, and many more are still missing. It is one of the worst disasters in living memory in the Mediterranean. But before that tragedy, the same storm, Daniel, ravaged Greece: in two days, two years' worth of rain fell, and as a result, a quarter of the arable land was lost for the next few years.

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Terrible news from Antarctica: after the end of the Austral winter, a chunk of sea ice the size of Argentina has been certified missing, simply because the sea is too warm. Worse still, we now know that the continental ice sheet covering West Antarctica has entered into a process of irreversible collapse (even if we were to stop emissions in their tracks). All that remains to be seen is whether the five metres of sea level rise it implies will happen in a few decades or, hopefully, a couple of centuries. In the Amazon, a massive drought is accelerating a process that will push one of the most crucial forest systems for the Earth's climate balance to a point of no return, at which point its conversion to savannah will become irreversible. There is a good chance that by 2023, we will temporarily - or not - exceed the 1.5°C limit, much earlier than expected and much worse than expected in any model. We will have to wait for years for confirmation, but here is a warning from Earth: do not trust the models. This is not going to be at all linear or predictable. And Acapulco knows this well, having been hammered by the maximum category hurricane Otis, which formed in less than a day, dodging all forecasts.

Nor have the temperatures we are experiencing in Spain — even in October — gone unnoticed by almost anyone. In the Canary Islands, classes had to be cancelled. In October. The heat and the weather of a lifetime. On a smaller scale, we have also had our Daniel, our Otis: Cyclone Bernard unexpectedly intensified off the coast of Portugal, leaving two lives lost and economic losses in the millions in the province of Huelva.

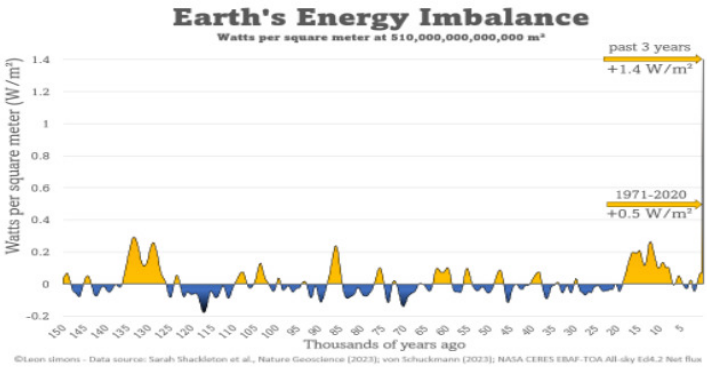
What do all these events tell us about the proximity of the climatic points of no return? They are leaping rapidly and ahead of schedule from theory to the most terrible everyday reality.

Given the enormity of the anomalies recorded in recent months, a scientific debate has also heated up: to what should we attribute the change of pace that the oceans are experiencing, the increase in temperatures, and the frequency and intensity of extreme phenomena? Global warming due to greenhouse gases is accelerating — this September was the most abnormally warm month in history — and is responsible, but what circumstantial factors are behind the acceleration?

Undoubtedly, the key to the imbalance lies in the balance. In the imbalance, instead. In the increase of the energy stored by the Earth. Heat is stored if the incoming radiation is greater than the outgoing radiation, and the difference becomes greater and greater. This is a simple matter.

Small values in this radioactive balance (five times smaller than those we have in the last three years) have served in the past to cause the melting of massive ice masses and produce the change from the glacial to the interglacial cycle of the entire planet.

However, the Earth's climate and its marvellous workings are all connected, so the relationships are rather more complex. The new phase in the oscillation of the Pacific waters, towards the warm part of its cycle (El Niño), is undoubtedly one of the main culprits of the temperature increase. But we are talking about a natural and cyclical oscillation, so it cannot be primarily responsible, at least directly, for this year of records and anomalies. Moreover, it is only now, in the latter part of the year, that it is beginning to have an effect. El Niño has not had time to be responsible. Let's face it: it's been more the adults.



One group of scientists seems to be pointing more towards another factor that we have noted in previous texts: the effect of the reduced amount of aerosols in the atmosphere (mainly due to the new maritime regulation that significantly limits the pollution emitted by ships from 2020). This study concludes that warming would be 30-50% higher without the effect of aerosols. The uncertainty about this impact is significant, mainly due to the feedback loops it causes. The effect is both direct, blocking radiation, and indirect: aerosols help the formation of clouds that also block radiation.

In reality, it is not one or the other factor but the sum of all of them and the effects they cause, including the combination of them. However, the most decisive component in this equation is almost certainly the slowing of atmospheric and oceanic currents.

Atmospheric currents (winds) are the main driver of surface ocean currents. Global warming is slowing winds at higher latitudes, and the lack of wind means that ocean waters do not mix as much, and evaporation does not occur as much. Combine this with the accumulation of freshwater from the Arctic melt at the sea surface, and the AMOC (the Atlantic and southern arm of the Great Ocean conveyor belt) is slowing down. The AMOC is a key element in the workings of the global climate (it makes Central Europe, despite being at the same latitude as Canada, have a milder climate), but it is now the slowest it has been flowing for at least the last 1000 years.

The slowing of the AMOC means a higher concentration of heat at the ocean surface.

The slowing of the AMOC means a higher concentration of heat at the ocean surface, which in turn accelerates melting at the poles, accelerating the speed of the whole slowing cycle—a veritable spiral of climate destabilisation.

The accumulated heat at the surface of the oceans means that there is a lot of potential energy available to reinforce storms that originate or pass through the accumulation zones. James Hansen, a retired NASA climatologist, talks of superstorms. Can you imagine what it will mean if more and more coastal areas experience hurricanes like Otis with increasing repetition?

The stopping of the AMOC will also divert the oceanic heat flow southwards, cooling the northernmost latitudes and destabilising the entire southern hemisphere. The Intertropical Convergence Zone (ITCZ), where the

atmospheric circulation of the northern and southern hemispheres meet, and whose variable position throughout the year governs the rainy season in South America, Africa and Asia, will be diverted southwards, drying out the Amazon, the African rainforest and Southeast Asia. Now think of all the carbon sequestered by those great forests that would die from lack of rainfall and be released as the trees die and rot. Or just stop those forests sequestering as much carbon as they are doing now, trying to compensate for human folly. It's dizzying. More and more studies, from the most reputable experts, point to this possibility for this century.

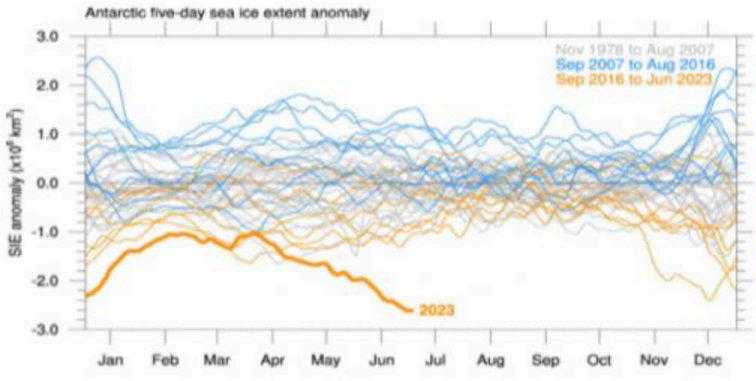
No wonder more and more scientists are signing manifestos admitting that "life is at risk" or that UN Secretary-General Antonio Guterres says that "the era of climate collapse has begun". Given the scale of the problem, it is hard to understand why it has taken us so long to recognise it.

El Niño, increasingly explosive

Our planet is not symmetrical. There is more land in the northern hemisphere and more sea surface in the southern hemisphere. This means that insolation on land favours greater energy accumulation in the southern hemisphere than in the northern hemisphere because water absorbs solar radiation more completely.

Due to the Earth's rotation, the oceanic and atmospheric circulations in each hemisphere exchange practically no energy; they are quite independent. So every so often, a planetary-wide effect occurs: El Niño, a disturbance that propagates across the planet for an entire year, from summer to summer, with its peak around Christmas Day (hence the name "El Niño"). After each Niño, it is (or was) expected to have one or two "Niñas", the opposite oscillation, which are like the normal state but intensified and which compensate for the over-correction of El Niño.

But the El Niño-La Niña cycle is also changing. La Niña events are increasingly multi-year, and the El Niño phase is becoming more explosive. This dangerous asymmetry will produce more significant impacts at both extremes. Super Niño events are also occurring more frequently than before. The last one, that of 2015-2016, has already produced an enormous anomaly in one of the most robust systems of the Earth System: Antarctica.



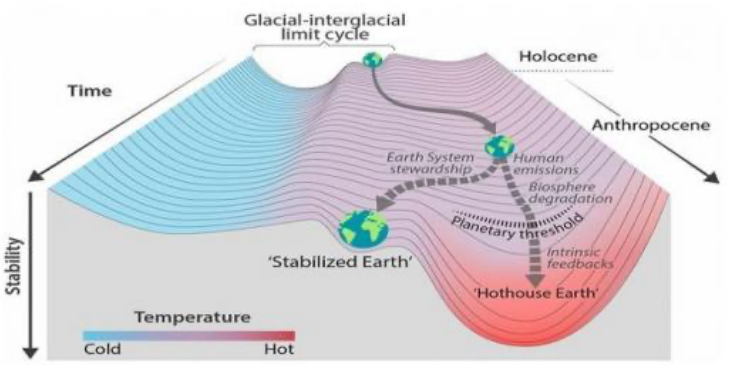
We have an Antarctic situation that we have already pointed out as very worrying. Surrounded by the strongest ocean current on Earth (but which is also slowing down fast), it is entering a different state: the increase in ocean surface temperature accelerates the melting of ice, which in turn generates a lower albedo (the smaller amount of ice reflects less and less energy into space, entering a feedback loop that increases both the ocean temperature and the melting of ice).

And when was that first tipping point in one of Earth's most robust systems? Right at the end of the 2015-2016 El Niño (at that time, there was hardly any aerosol influence). After that year, it has not recovered again, and the anomalies have continued to grow until we reached the next push of this creature: 2023.

The pronounced swings and instability are symptoms of approaching a tipping point, a point of no return, from which many of the critical systems for equilibrium will enter a cascade of effects in which one system will collapse into the next. We had a stable climate because the decisive factors in the equilibrium of that climate were stable.

If the amount of energy absorbed by the Earth increases - remember that 90% of excess heat ends up (or ended up) in the oceans - the natural oscillations that occur, and which were contained within the stability of the Holocene, will have more energy with which to surprise us, and even overwhelm us, causing anomalies that feed the same destabilising cycle.

A cocktail of factors (El Niño, fewer aerosols, the small effect of the eruption of an underwater volcano, being close to solar maximum, etc.) has produced a mega instability like this one in 2023, which will presumably be even worse in 2024, as the same factors continue to act, plus the inertia of emissions and the radioactive imbalance, which are the real culprits.



When, probably in 2025, the El Niño phase changes to La Niña, we will no doubt notice a small respite. Until the next shock, of course. And so on until a critical threshold is crossed, as if a marble were being pushed with increasing force by an El Niño until the marble starts to pick up momentum and falls into a new state. However, it is necessary to differentiate between the foreseeable effects in the short, medium and long term.

In the short term, we are heading towards an increase in extreme phenomena accentuated by natural fluctuations.

In the short term, we are heading towards an increase in extreme phenomena accentuated by natural fluctuations (El Niño-La Niña, the Pacific Decadal Oscillation, the North Atlantic Oscillation, etc.). In the medium term, as we have already pointed out, we are heading towards a more than likely collapse of the AMOC (and even the entire MOC) due to polar melting. And in the long term, if we do not slow down, to the Greenhouse Earth, which some of the best scientists on Earth warned us about only five years ago. The point of no return for both phase shifts could occur as early as this decade, although the effects may take a few more decades to show.

But let no one think that the weather has gone crazy. We are the crazy ones. Those of us who have sustained and continue to defend an insane system that sought to achieve the impossibility of eternal growth on a finite planet. And the defenders of this kind of senseless system - the neoliberal economists - are the priests of this suicidal religion of perpetual growth that even Pope Francis has had to come and point out as irrational.

The visionary Walter Benjamin already said almost a century ago: "Marx considered revolutions to be the locomotive of world history. But perhaps it is something completely different. Perhaps revolutions are the gesture by which the human race on this train pulls the emergency brake".

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The track is running out. We are leaving the Holocene, the Holocene of the four stable seasons and agriculture. We are now reaching the last station of the journey, the Anthropocene station. We no longer have much room for manoeuvre, but we can choose how we enter it and at what speed. We can slow down as gently as possible the Great Acceleration that we should never have let run amok to cushion and soften a clearly unavoidable blow, or we can continue at full speed while denying the seriousness of the matter until the final Big Brake, whoever jumps out of the window.

The planet's climate will never be the same again. Thus, Planet Earth will never be the same again. We have travelled so fast that we have reached another planet without leaving home. We had better make every effort in the world, in this new world, to understand it, to know it and to spread it so that we can prepare ourselves to face it with common sense and in the least individualistic way possible.

The end of the seasons is the end of nothing more (and nothing less) than climatic stability. It is the end of the stable, known seasons. At the same time, it is the beginning of a new climate regime full of uncertainties in which everything we know and love will be at risk.

Related links:

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- J. Bordera, et al: On How 'Lobbies' Water Down the World's Most Important Climate Report
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- Juan Bordera: Climate chaos (and an excess of Hopes and Mbappes)
- Editors of Monthly Review: Leaked IPCC Reports
- Álvaro J. de Regil: The Unbearable Unawareness of our Ecological Existential Crisis
- Álvaro J. de Regil: Transitioning to “Geocratia”: the People and Planet and Not the Market Paradigm — First Steps

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- **About the authors: Juan Bordera** is a scriptwriter, journalist and activist at Extinction Rebellion and València en Transició. **Antonio Turiel** has a PhD in Physics Theory and a degree in Mathematics, he is also a Research Scientist at the CSIC Institute of Marine Sciences and author of the essay Petrocalipsis.

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