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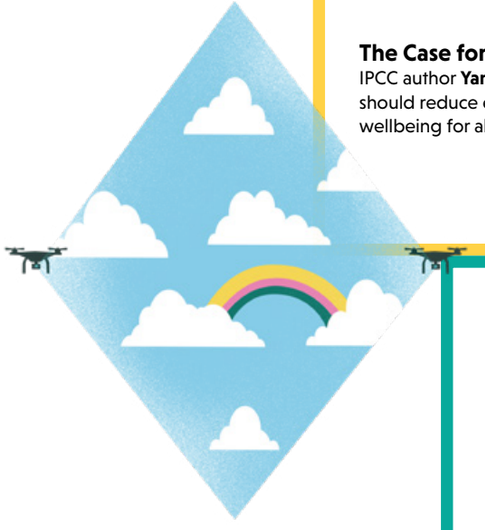
AT THE EDGE

FRONTIERS OF CLIMATE ADAPTATION



EDITORIAL

GETTING REAL

ALESSIO GIUSSANI

Adaptation is today's buzzword in climate discussions. It is on everyone's lips in Brussels, front and centre in scientific reports on climate change, at the top of cities' concerns, and fought for by civil society, workers, advocacy groups, and climate activists. In March this year, the European Environment Agency published its first Climate Risk Assessment, urging EU member states to better prepare for climate impacts. At last year's COP28 in Dubai, countries in the Global South pushed for the approval of a Loss and Damage Fund to help developing countries cope with the effects of climate change. According to the UN-sponsored Global Commission on Adaptation, no matter the ultimate mitigation path, adaptation strategies are worth pursuing.

Within the green movement, however, the idea of adjusting to the present and future impacts of climate change has long been associated with defeatism. This is not without reason: the political seeds of climate chaos, planted in twentieth-century inaction, found fertile ground in adaptation discourses centred on technological innovation. Still today, the human capacity for adaptation features prominently in techno-optimistic arguments for climate delay and the space colonisation dreams of billionaire tech CEOs.

There is also a more fundamental reason to be suspicious of adaptation: Why adapt to a reality of destruction and inequality? Shouldn't we strive to change it instead?

Yet the need to adapt is inescapable. Average temperatures are rising; heatwaves, floods, droughts, and other climate impacts are the new normal in Europe and around the world; and war and geopolitical tensions have made questions of energy and food security a priority, also in wealthy nations. In this context, adaptation is fraught with difficult political choices "in all areas of public action", as the president of France's Court of Audit put it.

As several contributions to this edition note, many of these choices need to be made on the ground and tailored to the local level. Compared to global emissions reduction targets, adaptation is more context specific and therefore suited to meaningful democratic participation. With global leaders failing to deliver on climate change mitigation with the necessary resolve and vested interests fuelling a backlash against climate policies, participatory adaptation can drive up social acceptance for the green transition, addressing questions of social and climate justice.

Direct participation in adaptation efforts can take different forms. Workers fighting for protection against weather hazards and asserting their rights in green industries are demanding that the costs of the transition not be displaced onto the masses. A months-long strike at a Tesla plant in Sweden has gathered broad solidarity in Scandinavia, while in Germany, public transport workers have allied with climate activists to advocate for public investment in the transition.

When seeking to prevent risks such as floods, local authorities can act in concert with communities to ensure that policies take into account the concerns and aspirations of those whose lives they affect. In other cases, mutual solidarity takes place on the fringes of, or in conflict with, institutional action, for instance in the case of initiatives to green cities through urban and guerrilla gardening or self-organised responses to natural disasters.

This opportunity for democratic involvement should not reduce the need for adaptation to a call for individual behaviour change, nor can it replace action by policymakers at all levels. Forums for global leaders, for instance, should play a role in mobilising and redirecting financial and technological resources towards developing countries, while the European Union is uniquely placed to better protect its citizens in times of eco-social crisis, move away from growth and consumerism towards sufficiency, and set up spaces for long-term thinking beyond electoral cycles. Political recipes that granted prosperity in the 19th and 20th centuries need to be rethought and adapted to the reality of a climate-damaged planet.

Macro-level responses need to be part of the equation, but they can also compound the violence of climate change. For instance, technocratic control of climate risk mitigation often fails to deliver democratically acceptable solutions. Similarly, national and EU-level adaptation strategies can amplify discrimination and vulnerabilities if they increase securitisation and border policing in response to perceived threats of "climate migration" and "climate conflicts".

Recognising the political nature of adaptation prompts us to look beyond the artificial (and ultimately harmful) compartmentalisation of climate action. Adaptation is about equity, justice, and wellbeing within planetary boundaries, which is not possible without swift mitigation measures. In this sense, as political ecology has always recognised, prosperity for all amidst environmental change entails far-reaching social and economic transformation.

Both social and climate scientists acknowledge that adapting and changing are linked. The Intergovernmental Panel on Climate Change (IPCC) defines "transformational adaptation" as a process that goes "beyond adjusting existing practices" and implies "deep and long-term societal changes", which include "values and worldviews".

As the climate emergency gets real, responses to it need to move away from grand declarations, aspirational goals, and invariably watered-down action and embrace more visionary politics that includes perspectives from the margins. But the urgency of adaptation also imposes the primacy of practice over vision – or rather the realisation that political imagination is not disembodied and only expands through collective action, both within and outside institutions.

By critiquing examples of maladaptation and showcasing stories of transformative change, this edition sets out to come to terms with climate adaptation from a green perspective – that is, to sketch out the political project that must underlie any credible attempt to "stay with the trouble".

GREEN CLASS STRUGGLE

WORKERS AND THE JUST TRANSITION

ARTICLE BY
GARETH DALE

Inspiration for decarbonising industry and creating green jobs is within the hands of those already facing precarity in today's economically unstable times. A resilient history of workers' initiatives overcoming redundancies, alongside recent activist, trade-union, and workforce collaborations, provides concrete examples for empowered transitioning.

In 2023, when Europe was blasted by a record-breaking heatwave named after Cerberus (the three-headed hound of Hades), workers organised to demand protection from the extreme heat. In Athens, employees at the Acropolis and other historical sites went on strike for four hours each day. In Rome, refuse collectors threatened to strike if they were forced to work during periods of peak heat. Elsewhere in Italy, public transport workers demanded air-conditioned vehicles, and workers at a battery plant in Abruzzo issued a strike threat in protest at the imposition of working in "asphyxiating heat".

One could almost say that the Ancient Greeks foretold today's climate crisis when they euphemistically referred to Hades, god of the dead, as "Plouton" (giver of wealth). The reference is to the materials – in their day, silver, in ours, fossil fuels and critical minerals – that, after extraction from the Underworld, line the pockets of plutocrats. Modern society's plutocratic structure explains the astonishingly sluggish response to climate breakdown. The much-touted green transition is barely taking place, at least if the atmospheric concentration of greenhouse gases is taken as a yardstick. These continue to rise, even accelerate, and likewise the rate of global heating. The transition remains in the grip of powerful and wealthy institutions that – even if we leave aside motivations of avarice or greed for status – are systemically constrained to put the accumulation of capital above the habitability of the planet.

Against this backdrop, the politics of transition is class struggle beyond that of workers defending themselves and their communities against weather emergencies. That is part of the picture, of course. But class struggle is, above all, evident in the liberal establishment seeking to displace transition costs onto the masses, even as it presides over ever crasser wealth polarisation. From this, resistance inevitably flows. The question is, what form will it take?

Some takes the form of an anti-environmental backlash, instigated or colonised by conservative and far-right forces. While posing as allies of "working families", they denigrate the most fundamental of workers' needs: for a habitable planet. Some takes a progressive form, the classic case being the *gilets jaunes* in France. When Emmanuel Macron's government hiked "green taxes" on fossil fuels as a signal for consumers to buy more fuel-efficient cars, the rural working poor and lower-middle classes, unable to afford the switch, donned yellow safety vests and rose in revolt. Although France's labour-movement radicals joined the cause, they were unable to cohere into a political force capable of offering alternative solutions to the social and environmental crises.

Surveying forms of climate-class struggle, movements, and events provides a glimpse into how the green transition might be redirected along social, worker-led lines. "Class struggle" is used in broad terms here to include questions of ecology alongside social reproduction, sexuality, identity, racism, and the like – all of which concern quality of life and are of as much interest to "labour" as are pay and conditions. Only from the vantage point of capital, or on a narrowly-drawn negotiating table, do workers' needs appear reducible to ledgers of hours and pennies. Tony Mazzocchi, the US labour leader who coined the term "just transition", provides a valuable counterpoint. As an activist, Mazzocchi was critical of the post-war social contract whereby union leaders surrendered input into decisions on the production process in exchange for improved wages. His red-green radicalism grew from the insistence that the health and wellbeing of workers requires transformation across the full spectrum of workplace and social life.

WORKERS' RESISTANCE

Climate breakdown is increasingly making its mark on all forms of class struggle. Across the world, climate hazards become embedded within labour struggles, forming a new basis of mobilisation, and on union safety committee agendas, emergency preparedness has been climbing the priority ladder. Freya Newman and Elizabeth Humphrys' research on construction workers in Sydney explores how workers understand heat stress as a class issue. "Our bosses never come out of

their air-conditioned offices on stinking hot days," grumbled one interviewee, even as they "make us work in horrible places with crazy high temperatures."[1] In regions where class consciousness is greater and unions had retained relative strength despite a general weakening trend during the neoliberal era, the researchers found that pressure from workers had secured the greatest improvements in climate-related health and safety conditions.

Protests demanding better protection against weather hazards, such as those in Athens, Rome, and Abruzzo, represent the close association of labour struggles with climate breakdown and ecological collapse. Another response is resistance against "indirect" effects. The scope here is vast and includes the 2010-12 revolutionary risings across the Middle East and North Africa, where meteorological volatility caused soaring food prices, and, more recently, the farmers' protests in India. It includes, too, industrial action in relation to the Covid-19 pandemic (if, as appears likely, SARS-CoV-2 entered human society as a result of environmental degradation).

Climate-related class struggle is not restricted to organising against the immediate effects of climate breakdown. As New York socialist Alyssa Battistoni states, it is present "in the rhythms of daily life", in "nursing homes and schools, on the bus, and in the street", affecting those in "pink-collar" jobs: teachers, care workers, and other service workers.[2] For society to rapidly dial down emissions whilst adapting to the effects of climate chaos, social solidarity and egalitarianism will be indispensable, pivoting on the self-organisation of workers across the range of "collars": not just pink but also blue and white, as well as black and green.

DECARBONISING JOBS

When we look for signs of a transition, the spotlight shines on sectors shifting work from black- to green-collar jobs: notably the automotive industry. For the transition to be experienced as even minimally just, jobs must be secure and satisfying. Yet corporations at the forefront of the decarbonisation programme – most notably Tesla – show scant regard for workers' rights. In 2023, industrial action at the Tesla plant in Gränna, Sweden, accompanied by solidarity action across Scandinavia, pushed back against the Musk company's anti-union stance and associated low pay and workplace injuries.

The transition, such as it is, is being driven by state policies. And, wherever green jobs are at stake, political demands will follow. Recall, for example, the protest at the Vestas wind

1 Freya Newman, Elizabeth Humphrys (2019). "Construction Workers in a Climate Precarious World". *Critical Sociology*, 46/4-5. Available at <https://rb.gy/5dd1fp>.
2 Alyssa Battistoni (2017). "Living, Not Just Surviving". *Jacobin*. 15 August 2017. Available at <https://rb.gy/8u9gnu>.

ACROSS THE WORLD, CLIMATE HAZARDS BECOME EMBEDDED WITHIN LABOUR STRUGGLES, FORMING A NEW BASIS OF MOBILISATION

turbine factory on the Isle of Wight in 2009. In response to its advertised closure, workers occupied the facility's administrative buildings. Their action was primarily a challenge to planned redundancies, but this took on wider meaning within the context of wind power's role in the energy transition. The occupiers pointed out that a closure of the plant would contravene the British government's decarbonisation commitments. Saving jobs, they argued, was synonymous with saving the planet.

Many recent examples carry the same lesson. The alliance in Germany between ver.di, one of Europe's largest trade unions in the public transport sector, and the climate protest movement Fridays for Future (FFF) is one such instance. Under the slogan #WirFahrenZusammen (we're travelling together), ver.di took industrial action to demand better working conditions and FFF organised demonstrations in over 100 cities, collectively pressing the political case that any successful transition will need a colossal investment in public transport.

"RED" REDUNDANCIES GOING "GREEN"

Given that electric vehicles (EVs), renewables, and public transport are indeed critical to the green transition, where does that leave workers in the most polluting sectors? Some of the most inspirational transition stories come from the automobile and arms sectors. In the early 1970s, working-class militants and unions around the world were taking up environmental concerns: the "red" and the "green" were finding a common tongue. In the USA, for example, the United Automobile Workers union leader Walter Reuther, who was not a radical by any means, declared that "the environmental crisis has reached such catastrophic proportions that the labour movement is now obligated to raise this question at the bargaining table in any industry that is in a measurable way contributing to man's deteriorating living environment."

FOR THE TRANSITION TO BE EXPERIENCED AS EVEN MINIMALLY JUST, JOBS MUST BE SECURE AND SATISFYING

In Britain, the workers at Lucas Aerospace, a British arms manufacturer, did precisely that. Citing automation and falling government orders, the company's management was laying off staff. In response, workers set up an unofficial union body, known as the Combine, representing employees from across the company's 17 factories. Their central objective was to staunch job haemorrhaging by pushing the Labour government to invest in equipment for life rather than death. In 1974 they drew up a 1200-page document that detailed ideas for redeploying their skills and equipment towards socially-useful production, including kidney dialysis machines but also wind turbines, solar panels, hybrid vehicle engines, and lightweight trains – decarbonisation technologies that were virtually unknown at the time. The plan was beaten away by the Labour government of the day and the company's management, who dismissed its authors as the "brown bread and sandals brigade". However, the Combine story remains influential.

More recent threats of fossil-fuel-sector redundancies have also prompted action. A group of workers from Maflow made headlines in 2018, for example, when they occupied the premises of the company's automotive components plant in Milan, Italy, and set up a cooperative, which they called RiMaflow, after owners began to relocate equipment to Poland. The workers developed a variety of "circular economy" projects, including the repair of electronic equipment and bicycles, as well as recycling wallpaper – all the while defending the occupied space against intrusion from police and courts.

In 2021-22, a flurry of such occupations occurred against the backdrop of a turn to state intervention in pandemic-afflicted economies. In Munich, at a Bosch engine components plant, workers were confronted with the threat of layoffs. Management blamed the decision on the shift to EVs, although in fact production was to be transferred to countries with lower wages. FFF activists teamed up with the union IG Metall (IGM) to resist the redundancies. Together, IGM and FFF pressed for a plant-level green transition, backed by state investment. The demand, published as a petition, was signed by a large majority of the workforce.

Following its purchase by Melrose Industries, a multinational asset-stripper, in 2021, GKN, another key player in the automotive industry, announced the closure of plants manufacturing components for automobile drivelines in Florence and Birmingham. Over 500 workers from the British factory responded with a vote for strike action. They demanded that the plant switch to producing components for EVs. In the words of the Unite union convenor Frank Duffy: "We realised that if we want to see a green future for the UK car industry and save our skilled jobs, we couldn't leave it to our bosses and had to take matters into our own hands." In conscious echo of the Lucas Plan, he added, "we put together a 90-page alternative plan detailing how we could reorganise production" to secure jobs and expedite the transition to electromotive transport.[3]

At the sister plant at Campi Bisenzio in Italy, transition-from-below went further. Having previously organised themselves into a democratic factory council (*collettivo di fabbrica*), workers were already in a strong position. They occupied the factory, and security guards, who had been ordered in, were sent packing. Together with climate justice activists and academics, the workers drew up a conversion plan for sustainable public transport and pressed for its adoption. In a sustained series of mobilisations, tens of thousands repeatedly went out onto the streets with the backing of trade unions and local communities, as well as environmental groups such as Extinction Rebellion (XR) and FFF. Now in its third year, the Campi Bisenzio occupation is Italy's longest ever. Having failed to force Melrose to reverse the plant closure, the workers shifted tack to form a cooperative that now produces cargo bikes, maintaining a segment of the original workforce in secure employment, providing a glimpse of how worker-led decarbonisation programmes might begin.

AERONAUTIC TRANSITIONING

In these automotive industry examples, the path of transition appears straightforward, at least in material terms. A plant producing, say, components for cars with internal combustion engines (ICE) can be converted to one producing EVs, public transport, or bicycles. What, though, of such industries as aviation, for which no viable alternative technologies exist? As the scale of the environmental crisis grows more daunting, even moderate voices, such as the Cambridge 'FIRES' group of engineers, recognise that aviation will have to be cut to virtually zero over the next two to three decades. How should workers in these industries respond?

3 Frank Duffy (2021). "We tried to transition to green jobs, but the bosses are closing our car factory down". *The Guardian*. 20 September 2021. Available at <https://rb.gy/i7t8m4>.

THE CLASS STRUGGLES THAT UNFOLD THIS CENTURY WILL DEFINE EARTH'S HABITABILITY FOR MILLENNIA TO COME

In Britain, at the height of the Covid-19 crisis, some small but brave proposals emerged. The Green New Deal for Leeds, for example, presented an alternative to the expansion plans for Leeds Bradford Airport. And workers at London Gatwick, Britain's second-busiest airport, developed an important Green New Deal for Gatwick (GND). The initiative, convened by eco-socialists and union officials from the Public and Commercial Services Union (PCS), took shape early in the pandemic when aviation workers were threatened with redundancies. I asked Robert Magowan, one of the proposal's instigators, what lay behind the deal: "We know that aviation must degrow," he replied, "and it was degrowing during the pandemic, but this must not come at the cost of workers. The pandemic response showed what governments can do when pressure is on – especially when the Broughton manufacturing site of Airbus was retooled to produce ventilators. That gave us inspiration, much as Lucas Aerospace had done decades before."

Magowan and the GND team mapped out the many ways in which the various categories of Gatwick workers' skills sets could be adapted to jobs elsewhere in decarbonising industries. With PCS backing, they found support among the workforce, including a pilot whose words eloquently sum up what is at stake:

It has been my lifelong dream to fly. To face up to losing this massive part of our lives is incredibly scary; to lose our job is like losing a part of ourselves. But as pilots, we use our skills to identify this existential threat to the natural world and our lives. If this was an emergency in flight, we would have diverted to a safe destination long ago. We can't just fly blindly to the planned destination as the flight deck fills with smoke. Our industry's impact on global emissions is irrefutable. The so-called solutions to 'green' the industry at its current scale are decades away and are not globally or ecologically just. With environmental consciousness rising, the aviation sector will either shrink by design, through a 'Just Transition' for workers, or by disaster. We must find a way to put workers at the forefront of the green revolution, to ensure we have the option to be retrained into the green jobs of the future.

In its first incarnation, the green revolution at Gatwick failed to take off. Yet it provided a sense of possibility. During the "emergency" phase of the pandemic, when government intervention was the order of the day, the Gatwick GND connected to other workers' initiatives such as the call by ver.di to replace short-haul aviation with ground-transport alternatives, opening up the horizons of a radical worker-led transition and reminding us of what is at stake.

CLASS-STRUGGLE ENVIRONMENTALISM

The class struggles that unfold this century will define Earth's habitability for millennia to come. We can find inspiration in struggles that unite climate activists and labour unions. We find it, too, in school strikes over climate change, which have introduced a new generation to the concept of strike action.

Yet we should also heed the fact that standout examples of red-green militancy happened half a century ago. This is no accident. The 1960s and early 1970s witnessed a worldwide revolutionary conjuncture, with surging labour militancy and social movements challenging oppression, injustice, and war. This was the soil in which the alliance of environmentalism and labour radicalism could grow, exemplified in the Lucas plan and Mazzocchi's ecosocialist activism, as well as other pathbreaking initiatives such as green bans, where environmental goals were fought for through strike action.

In any renewed wave of class struggle, we can expect questions of climate breakdown and just transition to move centre stage in multiple forms. These will include reactionary backlashes but also progressive movements, as groups of workers move beyond seeing climate politics as the playground of distant elites to a field in which their collective action can be decisive.

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TIME TO ADAPT

ARTICLE BY
PHILIPPA NUTTALL

Climate-related extremes are causing countries billions of euros in damage each year, and the more temperatures rise, the greater the costs will be. The EU has prompted its member states to prioritise climate adaptation, but progress has been slow, and European approaches still lack consistency. Community-led but coordinated adaptation strategies are imperative not just for the economy, but also for the health and security of EU citizens.

Until recently, in Europe at least, adaptation was almost considered a dirty word by climate campaigners and scientists, focused as they were on mitigation and the importance of cutting greenhouse gas emissions to halt a rise in temperatures. Any mention of needing to adapt to more extreme weather events was largely reserved for countries in Africa or Asia.

But emissions aren't falling as they must if the world is to avoid the worst impacts of global warming. As a result, adaptation is becoming front and centre in climate discussions across the globe, including in the EU. In March, the European Environment Agency (EEA) published the first-ever European Climate Risk Assessment to help EU member states identify policy priorities for climate change adaptation, warning of the myriad threats to "energy and food security, ecosystems, infrastructure"and more in "the fastest warming continent in the world".[1]

1 European Environment Agency (2024). *European Climate Risk Assessment.* Available at <https://bit.ly/4bxcrvq>.

ADAPTATION BECOMES VITAL IF LIFE IS TO CONTINUE LARGELY AS WE KNOW IT

Although the agency praises EU member states for their increasing use of national climate risk assessments to inform adaptation policy development, action on adaptation is moving too slowly. "Societal preparedness is still low, as policy implementation is lagging substantially behind quickly-increasing risk levels," says the assessment. "Most of the climate risks are co-owned by the EU and its member states; therefore, coordinated and urgent additional action is required at all governance levels."

The EEA assessment coincided with the Copernicus Climate Change Service confirming that 2023 had been the hottest year on record, "with global temperatures reaching an alarming 1.48 degrees Celsius above preindustrial levels". It should be remembered that leaders pledged in the 2015 Paris Agreement to keep warming below 1.5 degrees Celsius. While natural phenomena – notably the transition from La Niña to El Niño conditions – influenced the global temperature rise in 2023, Copernicus also highlights the continuing upward trajectory of greenhouse gases and their "significant role in driving global warming".

This year is likely to be just as hot, if not even hotter, Copernicus warns. The month of March was warmer globally than any previous March on record; not only that, but this was the 10th warmest month in a row compared with the same month in previous years. The average European temperature for March 2024 was 2.12 degrees Celsius above the 1991-2020 average for the month. It was also a wetter month than average in most of western Europe, while paradoxically, the rest of Europe was drier. Climate change attribution increasingly shows the link between such abnormal weather patterns and climate change.

GREATER FINANCING, GREATER URGENCY

Adaptation becomes vital if life is to continue largely as we know it. Carlo Buontempo, director of Copernicus, insists on a dual strategy of cutting emissions and preparing for the impacts of a climate-changed world "using climate change data and knowledge to prepare for the future". Adaptation is also an economic imperative. Between 1980 and 2022, climate-related extremes caused an estimated 650 billion euros in economic losses in the EU according to a report published in March 2024 by the Covenant of Mayors. Of that figure, 59.4 billion euros was lost in 2021 and 52.3 billion euros in 2022 alone.

Meanwhile, a March 2023 report from the EEA on the costs and benefits of climate change adaptation warns that failure to adapt will become increasingly expensive. In a scenario where the global temperature increase is limited to 1.5 degrees Celsius, the estimated adaptation investments are around 40 billion euros a year (for the EU-27 and the UK). But if temperatures rise to 2 degrees Celsius, total investment will need to grow to between 80 billion euros and 120 billion euros a year, and 175 billion euros to 200 billion euros at a 3- to 4-degree rise.

Evidence that worsening heatwaves, droughts, floods, and wildfires are not only the fate of far-flung countries has driven acceptance of the need for both mitigation and adaptation measures in the EU. Yet as the EEA report says, the EU and member states will have to act with much greater urgency, and with much greater financing, if infrastructure and people are to be better able to live in a warmer world.

LEGAL OBLIGATION

In 2021, as part of the European Green Deal, the EU adopted a new strategy on adaptation. The strategy sets out how, through "faster" and "more systemic" adaptation, the bloc can "become climate resilient by 2050".

Adaptation is now a legal obligation. The European Climate Law, which entered into force in July 2021, includes a requirement for the EU and member states to continuously enhance their adaptive capacity, strengthen their resilience, and reduce their vulnerability to climate change in accordance with the Paris Agreement. The law contains provisions for national adaptation strategies and plans and requires the European Commission to regularly assess such measures and issue recommendations where it finds they are inconsistent with the law's aims.

The pressure for more action on climate adaptation is also coming from campaigners. In February 2024, a host of non-profits signed the so-called Liège Declaration at the Climate Change Summit in Belgium. The Declaration calls on policymakers "to make adaptation a key priority" and "to integrate a culture of prevention and resilience at all levels of governance", as well as to "produce climate and environmental risk assessments to inform and strengthen future adaptation plans". It also urges the mobilisation of local governments, the private sector – including insurers and investors – trade unions, and civil society to create "bottom-up, gender-responsive local and regional adaptation plans and policies". Finally, it commits them to taking a "community-led and community-based local and regional approach to adaptation issues".

In March 2023, EU member states reported on their national climate adaptation plans. Since 2019, all countries have had adaptation policies in place, but as the EEA report shows, these vary in design and quality. Positively, the agency reported that national climate risk assessments are increasingly being used to inform adaptation policy development. Between the first reporting cycle in 2021 and

DIFFERENT COUNTRIES ARE RESPONDING IN THEIR OWN WAY TO THE CLIMATE ADAPTATION CHALLENGE

2023, roughly half of EU countries – namely Austria, Belgium, Croatia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Poland, and Sweden – reported substantial achievements in updating or conducting new assessments of climate-related hazards, vulnerabilities, and risks. On the other hand, it noted, countries with legal obligations for repeated climate risk assessments remain an exception in the EU. A minority of countries is yet to even produce their first national overarching assessment.

"Governance-related challenges are a persistent barrier to the implementation of adaptation actions in many countries, even where well-developed governance frameworks are in place," adds the report. "These challenges include difficulties in coordination due to limitations in financial, technical, and human capacities."

EU funding for adaptation measures comes from a multitude of programmes, including Interreg, the LIFE Programme, and Horizon Europe, the EU research and innovation funding programme. Most prominent is the EU Mission: Adaptation to Climate Change initiative, launched under Horizon Europe in 2021. The initiative is aimed at helping at least 150 European regions and communities increase their climate resilience by 2030.

EUROPE-WIDE CHANGE

As the EEA report suggests, different countries are responding in their own way to the climate adaptation challenge. Germany, for example, has set up a climate adaptation centre to help municipalities build knowledge, select and use funding, train staff, and exchange and network around the implementation of projects.

In France, the Cour des comptes, the country's supreme body for auditing the use of public funds, said in its annual report released in February that the French government should be much clearer on its plans to manage and finance the country's adaptation. The report suggests the government's "evaluation of current and future costs for adaptation is lacking in detail, if not nonexistent". Pierre Moscovici, first president of the Cour des comptes, said the government should "fix clear objectives" and "define a trajectory to reach them", recommending "massive public and private investments" and making clear that adapting to climate change means that "political choices will have to be made in all areas of public action".

Denmark is often cited as a leading actor on the energy transition. A February 2023 report by the International Energy Agency cites higher temperatures, increased rainfall, and rising sea levels as the main climate-related issues the country will face. Since the 1870s, Denmark's annual precipitation has increased by roughly 20 per cent, and climate projections indicate a further increase over the century, particularly in winter, warns the IEA. "More intense precipitation events could raise the risk of floods and aggravate the impacts on the energy system," it says.

Focused on these threats, 96 out of the 98 Danish municipalities have developed local adaptation action plans based on guidance from the Danish Nature Agency, and the government is drawing up a new national climate adaptation plan. (In 2020, the Danish Coastal Authority published a nationwide risk assessment for the Danish coastline, which included mapping of flood and coastal erosion risks and proposals for risk reduction strategies and coastal protection initiatives.)

Drought and floods are two of the main climate threats Hungary faces, with potential impacts on agriculture, food security, and soil degradation. In 2014, the country agreed its Second National Climate Change Strategy, which will run until 2025. It sets out ways to increase the resilience of livelihoods to disasters caused by climate change and to make agriculture more productive and sustainable.

A common thread through climate adaptation plans across Europe is that they will largely have to be implemented on the ground at a local level. With this in mind, a Policy Support Facility (PSF), under the Covenant of Mayors, was launched by the Commission to help local and regional authorities develop and implement climate adaptation measures. The PSF, a two-year pilot programme, ran from 2022 to 2023, and led to a series of national workshops that brought together local authorities from 12 member states. The work was focused on four areas, namely financing, nature regeneration, just resilience, and disaster risk reduction.

The projects supported under the programme were varied. Many were based on improving nature as a way to help jointly manage the biodiversity and climate crises. One such

ADAPTATION PLANS ACROSS EUROPE WILL LARGELY HAVE TO BE IMPLEMENTED ON THE GROUND AT A LOCAL LEVEL

project was support for the greening of a park in Ampelokipoi–Menemeni, a municipality of Thessaloniki in Greece, as a way to address threats from extreme heat, droughts, and water scarcity, as well as heavy precipitation and flooding. It included introducing more areas of shade to the park in order to reduce the effect of heatwaves. Elsewhere, projects included help to establish a climate adaptation coordination group in Apulia, Italy, and support to clean up and revitalise natural ponds in Hluk, Czech Republic, to better deal with flood waters.

COSTS AND BENEFITS

The EEA also makes clear the importance of analysing the cost-benefit ratio of various adaptation measures, citing heatwave warning systems as one of the most cost-efficient ways to help cities adapt to climate change. At the scale of European capital cities, it estimates the cost-benefit ratio of such systems at between 11 and a mightily impressive 3700. The report lists various projects and their relative cost-benefit ratio. One example is an analysis of the green (natural) and grey (human-made) measures – from the restoration of wetlands to the expansion, reconstruction, and modernisation of river embankments – to reduce the risk of river flooding in Sandomierz, Poland. The measures cost around 217 million euros, says the EEA – far below the estimated 445 million euros that would need to be paid out to repair flood damage to buildings.

In April 2024, the European Investment Bank held the first of its Adaptation Days conferences, which brought together numerous stakeholders – banks, insurers, scientists, local councils, and more – to explore adaptation solutions. Roman Röhrl, a European Investment Bank adaptation expert, told the conference: "So far, adaptation is often a small component of bigger projects. We would like to see more bespoke investment programmes where adaptation comes first. We see projects where, for example, a section of a motorway is upgraded and adapted. What we want to see is the adaptation of the whole network."

Bouke de Vries, an advisor to the board of Rabobank, said during the event that banks and the financial sector can help change the system, but that they need more clarity from governments before they act. "We don't often ask for regulation, but here we do," he said. In the Netherlands, Rabobank is working with business parks and homeowners to offer programmes tailored to adapting to climate change. "We asked the government to pinpoint where we should not build anymore, and where we can, with modifications," he said. "Climate mitigation and adaptation need to be seen as an opportunity, not just a risk."

QUESTIONABLE POLICIES

Responding to the EEA's climate risk assessment, Maroš Šefčovič, the EU vice-president for the European Green Deal, told journalists that changing the way Europe does business is "a matter of economic survival". The Commission's response to the EEA report was to pledge to include "climate consistency checks" in better regulation requirements and to help ensure the availability of "high quality" and "accessible" climate data. It also promised to improve understanding around the risks of climate change to critical infrastructure, as well as how energy supplies, transport links, and buildings can be better protected from extreme weather events.

On the non-profit side, the WWF is calling for a new EU climate adaptation framework that guides, coordinates, and drives member states' actions better than it believes the EU's current adaptation strategy does. This includes prioritising nature-based solutions and a water and climate resilience law.

However, the recent direction of some EU policies – not least the decision to rush through legislation to reduce environmental measures aimed at making farming more sustainable and resilient under the Common Agricultural Policy, and the continuing failure to agree on the EU Nature Restoration Law after last-minute opposition from Hungary – has left many campaigners questioning the direction of climate policy travel.

"Protecting EU citizens isn't just about the climate, it is about our energy independence, economy, health, ecosystems, and food security. It encompasses our whole society, and any time for complacency is long past," says Alex Mason, head of Climate and Energy at WWF's European Policy Office.

He insists on the need for adaptation and mitigation policies. "It won't be easy, but the alternative – trying to adapt to runaway climate change – will be nearly impossible."

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TROPICAL ITALY

SICILY'S MANGO AND AVOCADO BOOM

TEXT BY
STEFANO LIBERTI
PHOTOGRAPHY BY
FRANCESCO BELLINA

A small agricultural revolution is underway in Sicily, where farmers are taking advantage of warming temperatures to bring new fruits to market. But will this be enough to turn the fortunes of southern Italian farming, which is increasingly grappling with droughts and other climate impacts?

Avocado trees in Sant'Agata di Militello, Messina, Sicily, 2022

"When I started, no one believed in me," says Pietro Cuccio, holding a perfectly ripe mango in his hand. The 70-year-old former architect is a pioneer: more than 20 years ago, he had the idea of planting tropical fruit trees in Sicily, becoming the first person to do so. Now he grows mango, avocado, lychee, and passion fruit at the headquarters of his company, Cupitur, in Caronia, on the island's northern coast. Cupitur has been producing these exotic fruits since 2000. They grow in the shadow of the Nebrodi mountains that slope wildly towards the sea, and are sold throughout Europe.

The main markets for his produce are Germany, Switzerland, and the United Kingdom. But the hunger for these crops is also growing among Italians, so much so that Istat, the country's national statistics institute, includes mango and avocado in the consumer price index basket. The price is excellent for producers, and the income opportunities are compelling. "I sell mangoes for 3 to 5 euros per kilo, depending on the variety, quality and appearance," Cuccio says. "If you consider that lemons have reached 20 cents, you understand that the price of tropical fruit can be a driving force for a more profitable agriculture."

Cuccio lived in the United States for 30 years, first in Los Angeles, then in Hawaii, where he began to dedicate himself to the production of mango. Then, at the beginning of the 2000s, he returned to Sicily to cultivate the same fruit with which he had made his fortune on the other side of the world. "At first they thought I was crazy," he says of his fellow farmers. "But now I can say that my intuition was right."

With the help of agronomists from the University of Palermo, he found suitable soil and experimented with multiple varieties, planting different species and studying their adaptation to the territory. Eventually he won his bet: today he produces 20,000 kilos of mango, 12,000 kilos of lychee, and 10,000 kilos of avocado annually. While Cuccio works with a trusted agronomist, as well as a handful of workers assigned to harvesting, he controls everything himself. He follows the progress of the plants, the degree of maturation, fertilisation, and biological control techniques. "We have few problems with birds and parasites," he notes. "As our fruits are non-native, animals don't recognise them."

The mango trees grow lush behind a system of nets that protects them from the wind. The plants are not stacked close together as in Italian apple, pear, and peach orchards. They are left to grow at a distance, each with their own space. Cuccio enjoys talking about the different varieties and the multiplicity of fruit he grows, their ripening periods

Avocado tree in fruit. Sant'Agata di Militello, Messina, Sicily, 2022

and organoleptic characteristics. There is Tommy Atkins, with his purple skin, Keitt, with a very sweet pulp and no fibre, and juicy Maya. Then there is Kensington Pride, the original creature, the one with which the experiment in Sicily began. Seventeen different types of mango are being grown here, and the team at Cupitur are experimenting with others.

WAGER WON

Cuccio's success paved the way for others who realised that there was a potential market and optimal climatic conditions. His company is now the object of pilgrimages: dozens of farmers come to meet him and visit his fields. They ask for advice and information as to how they might also enter the business.

The example of Cupitur, and the dozens of other agricultural companies that have followed it, is an emblematic case of agricultural adaptation to climate change. Being at the centre of the Mediterranean region, where the effects of global warming manifest themselves most visibly, Sicily and southern Italy are experiencing new temperature records every year. In the summer of 2021, the Siracusa province in southeastern Sicily saw temperatures reach 48.8 degrees Celsius – the highest ever recorded in Europe. But it is the mild winters, with temperatures never dropping below zero, that make conditions ideal for growing tropical crops.

"Today the climate helps," says Cuccio. "Mango plants suffer when it gets close to zero; they die if it drops to minus four. However, they grow well in sunny and very hot spring times and summers. Let's say that the current temperatures are particularly favourable, and it is likely that they will be increasingly so."

Cuccio and the entrepreneurs who have followed his lead have found a way to transform a problem into an opportunity, becoming the vanguard of an agricultural boom. Since 2004, the number of hectares cultivated with mangoes and avocados in Italy have risen from just 10 to 1200, according to estimates by Coldiretti, Italy's main agricultural organisation.

SHRINKING PEARS

This growth counterbalances the collapse of other fruit and vegetable harvests in Italy. The droughts, prolonged heatwaves, and the increase in extreme weather events that have affected the peninsula and the Mediterranean area in recent years are having a devastating impact on Italian agricultural production.

According to data from the European Severe Weather Database (ESWD), there were 3,468 extreme weather events in Italy in 2023, or almost 10 per day. The hailstorms, torrential rains, and 80 kilometre-per-hour winds that hit Italy last year caused extensive damage. The general trends are worrying: the production of pears experienced a 75 per cent drop in 2023 compared to 2018; cultivated hectares of kiwis, of which Italy is the world's second-largest producer after New Zealand, have decreased by 50 per cent in the last 10 years.

Medium-term forecasts from the European Environment Agency are equally discouraging: a report published in 2019 predicted a collapse in the productivity of agricultural land in southern Europe, with the potential for crops such as wheat, corn, and beet to decline by

50 per cent. Coldiretti puts the damage to Italy's agricultural sector caused by climate change over the past year at 6 billion euros.

Can these losses be compensated by growth in tropical fruit production? Is Italy destined to change its agricultural model and replace traditional crops, such as citrus fruits, tomatoes and cereals, with mango and avocado plantations?

"I wouldn't talk about replacement, rather about rediscovering a vocation," says Andrea Passanisi. "This is precisely what we are doing. We have introduced something new, thanks to a terrain that allows us to do so, without denying our traditions."

Mangoes growing in a greenhouse on Maruzza Cupane's farm MaruMango. Rocca di Capri Leone, Messina, Sicily, 2022

Inside the farm of Maruzza Cupane. Rocca di Capri Leone, Messina, Sicily, 2022

GOING BIG

If Cuccio is the pioneer, Passanisi is the main proponent in Sicily today of developing tropical fruit production. Several years ago, the farmer, who hails from Giarre, a town on the slopes of Mount Etna, began producing Hass avocados – the popular supermarket shelf variety whose skin blackens when the fruit ripens. The 39-year-old entrepreneur says that the idea came to him during a trip to Brazil 10 years ago, when he saw and tasted the lush tropical fruits. Upon returning to Sicily, he asked his grandfather if he could carry out some experiments on the family land, and discovered that avocados grew very well.

Since then, his business, which markets a "zero kilometre" avocado, has expanded. Today, Passanisi manages "Sicilia Avocado", a consortium of 43 companies that grow avocado, mango, passion fruit, lychee, and papaya on 188 hectares of land between Giarre and Acireale. Each year the consortium produces some 1400 tonnes of tropical fruit. It works regularly with some of the main Italian large-scale retail chains, as well as with foreign retailers, and has an online shop that boasts 70,000 active users. He recently experimented with a new production: avocado oil, which he produces in a local mill.

Sicilian coffee cultivation.
Palermo, Sicily, 2022

Passanisi has exploited the shift in weather conditions in southern Europe, and says that climate change partly favours exotic fruit production. But not all that glitters is gold. "Of course, the temperatures are higher and the plants don't freeze. But we too are subject to frequent extreme events that can damage the trees."

AVOCADO FEVER

If hectares increase and production grows, it'll be because demand is on the up – nationally, as well as across Europe, and even globally. According to a study carried out by CSO Italy, a research centre created by farmer organisations in northern Italy, avocado purchases grew eightfold from 2012 to 2022 in Italy. "Over the last five years, the volume of avocados that Italian families bring into their homes has more than tripled and even quadrupled in terms of expenditure," says Daria Lodi, who led the study.

The vast majority of avocados purchased in Europe come from South America, especially Peru, Chile, and Colombia. But their significant water needs mean that cultivation of avocados has had an adverse effect on ecosystems in those countries. In Chile, which is affected by persistent drought, the impact of avocado farming on water reserves has come to the attention of the United Nations. The UN's 2014-2020 special envoy for the right to water, Léo Heller, asked the Chilean government to clarify its position regarding the intensive cultivation of fruit in the central region of Valparaíso, where plantations are depriving residents of drinking water.

Italian producers have developed a communication strategy that focuses on localism. "From the end of October to May/June we offer fruit with a precise identity, Sicilian but also Italian, a local product … enhanced also with quality, because what comes from abroad is still an excellent product," says Passanisi.

But the number of avocados produced in Sicily are not even close to covering national demand. Compared to the 47 million kilos imported into Italy in 2022, local production stands at between 1 and 2 million (there are no official figures, only estimates made by sector operators).

UNCERTAIN FUTURE

"I still estimate seven to eight years of growth in production, driven by good prices and market demand," continues Passanisi. "But there is a limit: avocado can only be grown in suitable areas, where there is a certain type of soil and an abundance of water, such as the one on the slopes of Etna where we are."

In the meantime, other regions of southern Italy, from Calabria to Puglia, are taking up avocado production. And other types of tropical crops are being experimented with. Palermo, for instance, is testing the production of bananas and coffee.

There is no certainty that these other products will take hold, nor that the slopes of Etna and elsewhere will be able to produce continually high yields of avocados and other tropical fruits. But if climate trends continue as they are, this land of citrus fruits could, in the near or far future, be one of bananas, mangoes, and other once-exotic imports.

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TO THE LIFEHOUSE
ANARCHIST THOUGHTS ON CARE

AN INTERVIEW WITH
ADAM GREENFIELD
BY **KONRAD BLEYER-SIMON**

With international politics' inability to deliver meaningful and timely responses to the climate emergency, local communities are at the forefront of adaptation. Could successful experiences of mutual self-organisation eventually lead to a decentralised network of global solidarity?

KONRAD BLEYER-SIMON: Your new book *Lifehouse: Taking Care of Ourselves in a World on Fire* starts with the transformative experience of Superstorm Sandy in October 2012. Why was this devastating hurricane so important for the development of your ideas?

ADAM GREENFIELD: When Sandy made landfall in New York City, my partner and I were on the West Coast, visiting my father, who is one of those people who have a TV running in the background all the time. At some point during our visit, I glanced up at the screen and saw that the image on *CNN* was the view outside the window of our flat in New York City. I was shocked: there was the same intersection we looked at every day, waist-high in floodwater, with the traffic signals overhead swinging wildly in what must have been 40- or 50-mile-per-hour winds.

As soon as we got back home and were able to assess that our building was undamaged, our next instinct was to do something to help our community. As bourgeois, middle-class New Yorkers would ordinarily do, we got in touch with the local office of the American Red Cross to find out where we could volunteer, but they did not have any use for us, and said that the best thing for us to do was to stay home. Fortunately, we had heard through some friends that there was an effort in Brooklyn that was accepting volunteers, so we showed up at a church on Clinton Avenue and started doing relief work immediately.

OCCUPY SANDY WAS AN ENTIRELY SELF-ORGANISED, BOTTOM-UP, CITIZEN-LED RESPONSE TO THE CIRCUMSTANCES OF THE SUPERSTORM

What was happening there and at dozens of other sites across the area – which came to be collectively known as Occupy Sandy (OS) – was an entirely self-organised, bottom-up, citizen-led response to the circumstances of the superstorm. I have always harboured a left-libertarian and anarchist sympathy, but there has never been much scope for such sentiments on the American political scene. However, what we saw from the moment we showed up at the church was the practical realisation of a hope I had nurtured in my heart for decades. This scrappy, spontaneous initiative was more congenial to my beliefs about the world than anything I had seen before. What occupied my mind as I was moving and sorting boxes of relief supplies was the question of what might happen if we could organise more of our lives this way.

What is left of Occupy Sandy?

Once the storm and its aftermath had passed, the normal institutional framework of everyday life reasserted itself with astonishing speed, and before long there was not really anything left of Occupy Sandy per se. It probably played a role that public institutions and private funding bodies tried to pick off what was best about OS. The Special Initiative for Rebuilding and Resiliency, for example, an official effort of the New York City government, tried to recruit the people they considered OS's most effective organisers.

I don't think such attempts to integrate Occupy Sandy's practices into the official disaster relief and recovery framework ever came to very much. But the recruitment attempt did manage to create social fissures within OS – especially between those who were a priori ideologically opposed to joining forces with the government, in any way, shape or form, and those who thought the question of state involvement was secondary, as long as people were able to get the help they needed.

By now, there's no organisational centre of gravity that came out of Occupy Sandy, neither in New York City nor anywhere else. But the self-assembling skeleton of new initiatives – what makes them arrive on the scene fully formed, even though they seem to come from nowhere – is created by the relationships we build during our response to previous emergent situations. OS itself was built on the relationships that were forged through the occupation of Zuccotti Park, during Occupy Wall Street, in the fall of 2011.

From my perspective, what is going on at such moments shows a lot of similarities with the concept of "stigmergy", which is a mechanism of indirect coordination that we can see, for example, in ant colonies. When a foraging ant finds a source of food, it lays on the ground a marking pheromone, signalling the presence of food to other ants, and the trail strengthens over time as more ants traverse it and reinforce the marking. In essence, that is part of what we are doing in efforts like OS: laying down trails for people to follow, so they can more swiftly find their way to what works when they are confronted by their own emergent situation. My book is an attempt to reinscribe those trails and make them more tangible, so people know that these tactics have been successful in the past, and that they remain available for reinterpretation by anyone who needs them.

Why was Occupy Sandy more effective than established relief institutions?

The first reason is simply the number of people Occupy Sandy was able to mobilise, just by being open and giving them meaningful things to do, no matter their background, level of training, or ability. About 60,000 people participated, and with that abundance of labour force you can achieve a lot.

The other important aspect is that Occupy Sandy never framed its actions as charity – something bestowed from above upon a passive recipient. Every interaction between an OS volunteer and somebody who was affected by the storm started with a respectful conversation between peers. Essentially, the volunteers would start by asking: "How are you doing?" It was only in the course of such a conversation that they approached the question of whether there was anything they could help with. And that's significantly different from the approach of established institutions that maybe show up at an intersection, five or ten blocks away, and announce over a loudspeaker that they're offering hot soup for the next half hour. But what if you do not need hot soup or a blanket right now? What if what you need is diapers for your kid, or insulin, or help to muck out your basement? These are the kind of issues that for the most part remained invisible to the top-down relief agencies.

How is this process of mutual care connected to anarchy?

The simplest way to put it is that there were no leaders in Occupy Sandy. As an organisation, it was instantiated entirely by the people who were present at any given moment. All of the important decisions were made through a participatory and deliberative process that aimed to secure the full consent of everyone present. And I think that this sort of thing – the provision of mutual aid delivered horizontally through a democratically managed process of consent-seeking – is the primary form that anarchism takes in our time. The great 20th-century British anarchist Colin Ward said that you don't have to "be an anarchist" or "believe in anarchism" in order to *do anarchy* quite successfully. And in this context, "doing anarchy" means 60,000 New Yorkers of every background organising themselves for the difficult, dirty, occasionally dangerous work of disaster relief with astonishing effectiveness, without anyone telling them what to do or how to do it.

Having achieved that, even under fairly extreme pressure, is proof that these tactics and practices are suitable for use in other circumstances. I found it an incredibly inspiring experience, just boundlessly energising and provocative, and I have never let go of the expanded sense of possibility it left me with.

Do you consider mutual self-organisation a form of climate adaptation?

Absolutely. Even if we somehow managed to become carbon neutral instantaneously, globally, with the wave of a magic wand, we would still have to suffer the consequences of climate degradation for at least a century before the atmosphere restabilised itself.

So the question is what kind of adaptation we work towards. In my view, it's important not to reinforce the systems of injustice and oppression on which our societies are founded. Instead, we should imagine a more fruitful and generative future for ourselves, and initiatives like Occupy Sandy hold great promise in this regard.

You write in the book that opportunities for the individual to effect meaningful political change are virtually non-existent in the current economic system. Should we not expect outcomes from climate negotiations, activism, or policymaking?

The key word here is "expect". It's fine to dedicate time, energy, and attention to these processes, but I think it's wise not to expect any outcome from them. By contrast, the processes that I believe in and advocate for are ones where there's a closer coupling between the investment of energy and effort and the result you see in the world, so that you'll know whether or not your actions have been effective. If you're doing urban gardening and you see that potatoes and carrots are growing, or you're working on a community solar microgrid and you manage to generate energy for places and people that didn't have reliable access to power before, these material facts reveal the effect of your actions on the world in a way that a psychic investment in your country's net zero policies probably will not.

Not to mention that it is hard to imagine what impact I might have on Chinese, or Indian, or Saudi policy, or World Bank decisions. If China recommits itself to coal-fired power generation, what influence do I have over that? All I can do, within the ambit of my direct ability to affect the world, is to take measures to ensure that the consequences of that decision are not overly burdensome or fatal for the community I live in.

In your vision, self-organisation would be powered through so-called Lifehouses. What exactly are they?

The concept of the Lifehouse gets its start in something that happened during the aftermath of Sandy, but which I was never lucky enough to see with my own eyes. After Superstorm Sandy, the power was out for weeks in some neighbourhoods. People who lived there couldn't even charge their phones. They had no way of keeping in touch with each other or knowing what was going on. But there was a squat on the Lower East Side of Manhattan that happened to have an old exercise bicycle lying around, and somebody figured out how to wire it up to a dynamo and a storage battery. So long as somebody pedalled the bike, they could keep the battery full and use it to run a bank of phone chargers they had set up on a folding table outside on the sidewalk.

What's brilliant about this is that, through addressing a material need, the table outside the squat became something more than a place for people to charge their devices: it became the hub of a social community. We saw similar examples at a still larger scale in 2017 in Puerto Rico during Hurricane Maria, where democratically managed, solar-powered

WHAT IF YOU COULD CREATE A PHYSICAL PLACE IN EVERY COMMUNITY WHERE PEOPLE CAN GATHER AND TURN TO ONE ANOTHER IN THE EVENT OF A CRISIS?

SOMETIMES WE CAN TEMPER THE FERVOUR OF OUR PARTICULAR BELIEFS AND REALISE THAT WE SHARE COMMON OBJECTIVES

microgrids allowed entire communities to survive extended periods of electricity outage, powering medical devices, air conditioners, and dehumidifiers, as well as personal electronics.

The sustenance people drew from their interactions and exchanges in these moments was not just about being able to charge their phones. It was about knowing that others were in the same situation they were in, that there were resources available, and that they did not have to face the storm alone. Bottom line, if you create a resource that helps people resist the violence that is falling upon them, you will ultimately draw them into a different kind of relationship with one another: one of mutual support, care, assistance, and empowerment. That is the kernel of the Lifehouse idea.

What if you could create a physical place in every community where people can gather and turn to one another in the event of a crisis? Such resources do not have to arise after a disaster, as was the case with OS. We can create and stock them now, in advance of the moment of maximum need, to be managed democratically by the people who live in the community. Perhaps at some point this becomes the crux of decentralisation or distribution of initiative and resource – which is to say, a fundamentally different orientation towards everything up to and including the governance of everyday life.

How would a system of Lifehouses come into existence?

Each of us, as individuals or in small groups, might organise such things in our own backyards. But if a network of Lifehouses is to come into being, there's a need for people who can hold the local and the global in mind at the same time, and devise processes to help bind community efforts to one another and to a broader, overarching initiative. We would have to create democratic and accountable relations that respond to the needs of people in each local context. But we would also have to bring communities into alignment with others around the world, make sure they share resources and support each other. Lifehouses that do not have an immediate need for certain resources should find ways to offer them to others who are in acute need.

It will take a lot of effort to make such a confederation possible. But none of this can even begin unless people perceive the desirability of such a network based on what they are experiencing in their own backyard. Fortunately, the local bit is in many ways the easy part: there are already hundreds of thousands of organisations that could become the seeds of a Lifehouse network. Food hubs, food banks, and soup kitchens that were set up to respond to the ordinary disasters of late capitalism could be repurposed to respond to extreme weather events. What remains is for each of these local initiatives to discover themselves as an organic component of something larger and still more powerful.

You are not a fan of political involvement in this process.

The main issue with conventional electoral politics is that even when a progressive party is fortunate enough to enter power, it is still subject to the ordinary rough-and-tumble of democratic alternation. It is always possible to be ejected at the next election, while many of the adaptational or reparative processes that we're talking about require more than the few years of an electoral term.

My other reservation is that policymaking in a representative democracy involves a great deal of horse-trading – or, to switch clichés, a sausage-making process that leaves nobody with clean hands, and which nobody really wants to see. This is especially problematic in the case of climate, where it is all about timely action, and the consequences of delayed or inadequate action are likely to be every bit as fatal as those of complete inaction. Rarely does climate policy get passed without being watered down.

Still, is there anything a progressive political party or coalition can do to support the creation of Lifehouses, such as changing regulation or providing "startup capital"?

That is absolutely the case. No community initiative is going to be able to craft legislation that, say, decriminalises appropriation of abandoned structures for vital community use, or clarifies what self-defence measures communities can take against hostile climatic conditions. That is up to our political representatives. Similarly, a political party can function as part of the mesoscale organisational fibre that binds up individual Lifehouses as part of a larger, functioning whole. It can begin to create the enabling conditions that unlock the initiative and latent energy every community has.

Some of us have skills that are more geared towards local action, toward physically assembling the structures and systems that will keep us safe, but there will also be those who were born to be policy experts, those who study law and devise new systems of regulation and public order. Each one of us has a job to do.

The organisational infrastructure of a Green Party can be a tremendous asset. I do not see any contradiction in people who want to devote their time and energy to formal Green politics working in collaboration with those of us who are outside that structure. Maybe sometimes we can temper the fervour of our particular beliefs and realise that we share common objectives. The prospect of survival under the sign of justice and dignity makes it worth engaging in some powerful collaborations, regardless of differences in opinion and choice of tactics.

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CULTIVATING RESILIENCE

URBAN AND GUERRILLA GARDENING IN BARCELONA

ARTICLE BY
MARIAM DZNELADZE

Urban centres are among the hardest hit by the climate crisis, not least because of the lack of green spaces. Urban and guerrilla gardening can contribute to cooling the city. They can also help to bring people together and fight food deserts while providing critical spaces for education and active citizenship.

"We grow food here that is quite expensive in the supermarket," says 36-year-old Maribel Lopez from Poblenou's urban garden with its large, inviting gate and neat signage in Barcelona's hippest neighbourhood on the east side of the city.

"This neighbourhood used to have a ghetto vibe before. Now, over the past two decades, it has changed. There is a really nice community and loads of cultural events. We have several urban gardens. Some have popped up, and some are managed with the help of the city government. Some people I know are members of several gardens and participate in seed exchanges. Some are also involved in guerrilla gardening."

Lopez explains that people come here to spend time during their lunch breaks, read a book, and enjoy time with their families and friends. "Growing food together and taking care of the plants, doing something with someone who you maybe wouldn't have otherwise met is what brings community to this space," she continues. "Here, we can learn and teach different skills, not only in relation to gardening but also about nutrition and upcycling. I joined to be closer to nature and my community. There is no greater joy than harvesting your own tomato, someone said. Well, I think it is an even better experience when you share this joy."

Lopez shows me different beds and what is being grown there. "Of course, not everything works out. We have had our fair share of plants dying," she laughs. "I think the value here is the process, the commitment, and for sure the distraction from everyday problems, the horrors of the world, and long working hours." Maribel explains that each urban garden collective decides on its structure, workload, and food distribution: some donate the harvest to those in need, some share everything among members.

Last summer it was often unbearably hot, and urban gardens were looked at as refuges from the heat even though they have few trees. "This neighbourhood does not have big parks. People have to go quite a distance for them or to the crowded beach to cool down. Urban gardens are mostly managed as temporary infrastructure; growing tall trees that provide a lot of shade is quite difficult," says Lopez. In my home country, Georgia, a cradle of winemaking, grapevines are often planted around *kheivani*, a type of trellis, which offers both delicious fruit and shade. Could similar solutions help Barcelona and other cities in the hot season by making up for the scarcity of trees?

As I leave the garden in Poblenou, I think of everything Lopez has told me, and wonder whether urban and guerrilla gardening can be an effective strategy to collectively organise around the impacts of the climate crisis.

GREENING URBAN HEAT ISLANDS

Cities contribute significantly to climate change and are heavily affected by its impacts. According to the Intergovernmental Panel on Climate Change (IPCC), urbanisation increases annual surface air temperature in cities and their surroundings, and this urban heat island (UHI) effect makes heatwaves more intense, particularly at night.[1]

Barcelona and the broader Catalonia region have been hit hard by warming temperatures and other climate impacts. The Catalan capital has been suffering from drought for more than two years. In February 2024, the city of Barcelona introduced a water-saving regime. Posters on public transport and all over the city warned inhabitants about the water shortage and empty reservoirs, and advocated an individual 200-litres-per-day limit. The government invested around 500 million euros in water desalinators to tackle the immediate problem. However, desalination is very energy-intensive and produces brine waste and toxic chemicals that negatively affect marine life in local bays.

1 The IPCC reports that urbanisation increases temperatures from 0.19 to 2.6°C, that UHI raises temperatures by 1.22-4°C, and that "there is a well-established relationship between extremely high temperatures and mortality".

"THE VALUE HERE IS THE PROCESS, THE COMMITMENT, AND FOR SURE THE DISTRACTION FROM EVERYDAY PROBLEMS"

City planners and governments need to take urgent action as matters get worse in urban spaces the world over. According to research carried out in Mexico City, transport infrastructure, especially roads, contributes significantly to UHI. Urban canyons of concrete and glass also add to cities heating up. In the longer term, shifting towards more eco-friendly construction materials and building a sustainable transport infrastructure are some of the strategies that could help Barcelona and similar cities adapt to the climate crisis.

Another strategy is re-greening. Unlike demolishing a skyscraper, planting trees and developing urban gardens takes significantly fewer resources. Introducing diverse flora, such as wildflowers, shrubs, and grasses ensures that moisture from the soil evaporates more slowly. Applying the principles of permaculture to build self-feeding systems contributes to urban water preservation and air quality improvement. Instead of a few square-metre areas containing only one plant species, permaculture advocates the benefits of planting different species. This method also minimises the efforts required to maintain a garden or green area. The climate crisis could be significantly mitigated if cities maximised the available space for growing beneficial plants, be it for food, pollination, or improving the soil, instead of keeping green lawns or covering areas with asphalt and concrete.

ENVIRONMENTALISM VS TOURISM

"The city of Barcelona has experienced great changes in its urbanisation over the last couple of decades," says Quique Gornés. As a civil engineer and member of the left-wing Barcelona en Comú party, Gornés became chief of staff of the Council for Climate Emergency and Ecological Transition between 2019 and 2023 during the second mayoral term of Ada Colau, a former housing rights activist. He was responsible for urban services, such as water, waste, renewable energy, green area management, and biodiversity in the city, as well as the climate emergency and its mitigation.

Once Spain had been restored as a democracy in the late 1970s, Catalonia's capital was transformed into a large, service-driven city concentrating on tourism. From the impetus of the 1992 Olympic Games until well into the 2000s, Barcelona's urbanisation followed the criteria of architectural beauty, functionality, or maintaining efficiency.

Cars circulated at the expense of green areas. Some symbolic actions were carried out in that period to reduce the presence of cars, such as the pedestrianisation of Avinguda del Portal de l'Àngel and the centre of the Vila de Gràcia neighbourhood, but these were actions favouring commerce rather than the reduction of emissions. "The economic crisis from 2011 to 2015 caused the right-wing government to bet on the city becoming a major tourist destination once again," says Gornés.

When Ada Colau became Barcelona's mayor in 2015, the fight to establish government action in response to the climate emergency became central. Barcelona Energia, the city's first municipal public electricity company, was created in 2018, supplying Barcelona City Council and more than 5000 families and companies with renewable energy. The city government also adopted the Climate Emergency Plan, and started transforming towards a Doughnut economic model and implementing a sustainable urban drainage system.

"Unfortunately, we did not quite manage to recover public ownership of the water supply company," says Gornés with regret. "The metropolitan region of Barcelona consumes almost 300 million cubic metres of water in a normal year – even without a drought. The number of tourists is growing year on year, putting additional pressure on the city and the region as a whole. In my opinion, the posters that are in public places should be put in each hotel room and lobby."

On a more positive note, Gornés attests to the "almost 90 hectares of urban land that were transformed into green areas during Colau's eight-year mayorship. And the strategy for the increase and improvement of green areas by 2030 was approved."

Barcelona already has approximately 360 urban gardens. Some are supported by Barcelona City Council. From school-yard projects for children to a special gardening programme established at the end of 1990s for senior citizens, the city has put a lot of effort into connecting generations and supporting biodiversity. Recent urban renewal projects, for example in Avinguda Meridiana and Passeig de Sant Joan, also enrich the streets: not only trees and grass but also flowers, grasses, and shrubs are now growing alongside pavements in these areas.

But there is still plenty of room for improvement. Like many cities, Barcelona has a significant

amount of unused land: abandoned yards, empty patches of earth on streets, huge spaces in between buildings in so-called "sleeping districts". Even the lawns around classic nuclear family homes could be put to better use. All this soil has great latent potential.

DIY EXTERIORS

A Catalan gardening activist, who prefers to remain anonymous, explains to me that guerrilla gardening, like urban gardening, is not as complex as it might seem. They tell me about who they garden with and how they organise themselves: "We chat on Signal. It is mostly Catalan people. We do seasonal, evening actions. Sometimes we prepare seed bombs, sometimes we use seedlings from our own homes or urban gardens instead and throw them here and there. We always try to put several plants under one tree rather than one plant here and one plant there. Trying to do permaculture in a little square surrounded by concrete is difficult, but it is better than nothing."

The activist, who studied botany at university, decided to apply their knowledge on a political and social level in the city. "There should be more radical and decentralised action," they say. "Everyone could be doing more – much more."

I want to have a list of takeaways and recommendations for guerrilla gardening. The activist gives me tips on how to get started:

- Make your group – you can be as few as four people as long as you are consistent;
- Create a safe communication channel for discussing your first action;
- Decide where you want to plant – best is somewhere nearby. Make sure there are no potential disruptions (police patrols, inquisitive neighbours, revellers from loud party venues or bars – anyone that you do not want to encounter while doing your action). You can skip this step if you work with seed bombs. Look for the spaces around trees, empty patches, and even private properties (for seed bombs);
- Choose and prepare your plants and tools;
- Plant. Always make sure to have two people watching the street – this really depends on where you live and how much the police and other people care about what you do. Some decide to do it during the day and wear "uniforms" so they are not bothered by passers-by;
- Keep an eye on the plants afterwards – check on them every once in a while.

"I wish more people were urban and guerrilla gardeners," the activist adds. "I am a member of many collectives now and constantly see people having their lives changed through these activities. Even growing a flower on your balcony can be beneficial. Perhaps we cannot tackle climate change with this alone, but we can for sure have a more socially connected, pleasant, and nutritious environment in our cities."

CITY PLANNERS AND GOVERNMENTS NEED TO TAKE URGENT ACTION AS MATTERS GET WORSE IN URBAN SPACES THE WORLD OVER

HANDS-ON RE-GREENING

Years ago, I felt inspired and decided to start experimenting with urban gardening by greening my balcony. Poblenou's Maribel Lopez and the guerrilla gardening activist I spoke to were right when they said greening spaces is easier than people think. After learning some basics and experimenting, I achieved the results I wanted. Those with access to the internet can tap into urban and guerrilla gardening examples from all over the world, get educated, and share experiences. You might not aspire to produce all the food you consume or want to spend your time in urban gardens, but even planting some flowers and setting up a wild bee hotel on your balcony – if you are lucky enough to have one – can make a difference.

If everyone makes their surroundings as green as they can, the overall urban ecological environment will be much improved. Of course, voting and other types of participation on a city level as well as other eco-friendly practices are important, but urban and guerrilla gardening are two of the easiest methods to contribute to improving the life and climate of the city you live in.

In almost every district of Barcelona, I see areas covered with yellow, burnt patches of grass or vacant lots covered with concrete. Even though many balconies and terraces feature decorative plants, satellite imagery shows that green roofs are practically absent. As yet, there is no proof that urban gardening would be efficient on a massive scale. A city that has urban gardens in all available spaces – excluding rooftops used for other, vital purposes such as energy production from solar panels – is needed as a study example. But existing urban horticulture projects in many cities, regions, and countries already show that they can be at least a partial solution to food insecurity and food deserts.

After living in Barcelona, where everyone is happy when they see rain, I had the feeling that with time it will also become more and more crucial

for people to grow their own food. Individuals, schools, collectives, communities, and families growing for themselves can empower themselves, others, and the planet. Urban activism in its various expressions has always been at the forefront of critical struggle, and now communities are building their collective and economic power through gardening.

Maribel Lopez and other urban and guerrilla gardeners are trying to achieve greater independence across Barcelona. Permaculture, green roofs, and other green infrastructure may come at a financial cost, but in the long run, the benefits are immense. And this investment is not just a tool to improve the life of urban residents but also a way to mitigate the effects of climate change.

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RECLAIMING TIME

ARTICLE BY
MARIE-MONIQUE FRANSSEN

In the West, the grip of clock time has become inescapable. Being overly busy may be worn as a badge of honour, but it is wrecking our health, our communities, and the planet. If we want to radically transform our societies, we need to rediscover time's connection to the Earth. How can we access other ways of experiencing time and implement them?

"My four-year-old wants to learn how to read the clock. What a pity…," a young mother of two tells me. She looks pensive. "I mean, I'll obviously teach him, but I already notice the clock is becoming a source of stress for him." Like most of us in the West, she suffers from permanent time scarcity and it weighs her down: the endless feeling of never doing enough, the limitless personal and professional needs she cannot possibly fulfil. Her reflection resonates with me. Just like the young mother, I too find myself increasingly preoccupied with the relentless onslaught of the clock on our personal lives. We both wonder about its implications for our social and ecological fabric.

My musings about the concept of time arose gradually, at first like little drops of rain touching arid land, only to then turn into a massive torrent, ubiquitous and unstoppable. As the theme forced itself on me, I was compelled to see how it permeated our collective bodies like a sponge. It reached its peak when several of my peers and close relatives started suffering from burnout, anxiety, and panic attacks, which led them to go on sick leave: two weeks at home, seven months of sick leave, years of withdrawal from the labour market. People had blood tests to rule out incurable diseases when all they needed was rest.

In my native Belgium, the number of people unable to work for more than a year due to burnout or depression has increased by as much as 46 per cent over the past five years. According to a new study conducted in six countries of the European Union, 38 per cent of workers are at high risk of poor mental health. As a society, however, we glorify those who are ultra-productive and ultra-active. We put them on stage and on the front page, holding up impossible standards for everyone else. Why, really? What are the trade-offs here? What keeps falling through the cracks? And, no less important, whose interests does this serve?

TIME SPENT, TIME SAVED

The first mechanical clock was invented in China in 725 AD. By the 14th century, it was widely used across Europe as a useful tool to structure societies, allowing us to get organised. But, since Einstein, we know that time measured in absolute numbers, where one unit follows the other, is simply not real. Instead, time is elastic: it passes faster on a mountain than at the coast. It is also relative: some minutes can seem to last for hours, while some hours pass like minutes. Since the invention of the mechanical clock and the introduction of Greenwich Mean Time and time zones, we have become disconnected from our personal, local, and natural temporal rhythms.[1] Clock time lost its original function and was appropriated to serve the needs of economic productivity. This economic view of time, as a finite amount of hours to be spent in the most efficient way possible, has, over the past two centuries, come to pervade every nook of our collective organisation. The impact of the ever-accelerating pace of clock time on our social and ecological lives is severe: it erodes our foundations of care and community, and the earth's resources and ecosystems.[2]

The Western approach to time is, unsurprisingly, about control. "A society founded on notions of control builds systems in which time does not flow in being, but is rather, compartmentalised and objectified as something outside the self," writes geographer Nicole Gombay.[3] The clock became the symbol of the arrangement of life itself, allowing the perpetuation of man's dominion over nature.[4] Dutch philosopher Joke J. Hermsen takes this critique a step further by comparing capitalism to "a tyrant seeking to expand his power by keeping the people constantly busy, that is, restless and unthinking",[5] adding that, in the West, "time has primarily become a political and economic construct at the service of capitalist ideology."[6]

HOW CAN WE EXPECT TO CHANGE ANY SYSTEM IF WE FAIL TO FREE OURSELVES FROM THE YOKE OF CLOCK TIME?

This productivity mindset has spilled over from the workplace and lodged itself into all aspects of our personal lives. It is what makes capitalism so successful not only in keeping itself alive but also in endlessly expanding: we have deeply and intimately internalised the rules it has imposed on us as absolute truths. This is what makes capitalism so inescapable and, therefore, so powerful. As philosopher Byung-Chul Han notes "the drive to maximise production inhabits the social unconscious."[7]

CHRONOPOLITICS: TIME IS POLITICAL

Since Aristotle, however, rest and so-called idleness are considered the conditions of culture and democracy because they allow stillness and contemplation. This stands in stark contrast with the frenetic doing we have succumbed to. Hermsen therefore wonders if the democratic nature of a society can be guaranteed if economic clock time has supplanted all other experiences of time, resulting in people's alienation from themselves and their environment.[8] How can we expect to change any

1 Joke J. Hermsen (2009). *Stil de tijd. Pleidooi voor een langzame toekomst*. Amsterdam: De Arbeiderspers.
2 Essential here is Hartmut Rosa's *Social Acceleration: A New Theory of Modernity* (2013). New York City: Columbia University Press.
3 Nicole Gombay (2009). "Today is today and tomorrow is tomorrow: Reflections on Inuit Understanding of Time and Place", in Collignon B. & Therrien M. (eds). *Orality in the 21st century: Inuit discourse and practices. Proceedings of the 15th Inuit Studies Conference*. Paris: INALCO.
4 Carolyn Merchant (1980). *The Death of Nature: Women, Ecology, and the Scientific Revolution*. San Francisco: Harper & Row.
5 Hermsen (2009).
6 Hermsen (2009).
7 Jenny Odell (2023). *Saving Time: Discovering a Life Beyond the Clock*. London: Vintage (Penguin Random House UK).
8 Hermsen (2009).

WESTERN TIMEKEEPING WILL NEVER BE AN ADEQUATE TOOL TO BUILD NEW WORLDS

system if we fail to free ourselves from the yoke of clock time and keep running longer and faster? Trying to find an answer to this question inevitably leads to another: in the realm of labour, whose time belongs to whom? And how does this structure power relations in our societies?

In recent decades, digitisation has not freed up time. On the contrary, now that we are always connected, it has pushed labour even further into the private sphere. In this sense, reclaiming time that does not care about profit and loss, about productivity and efficiency, is not only subversive but also a necessity. Poet and activist Tricia Hersey writes: "Rest is not some cute lil luxury item you grant to yourself as an extra treat after you've worked like a machine and are now burned out. Rest is our path to liberation. A portal for healing. A right."[9]

In her book *Saving Time: Discovering a Life Beyond the Clock*, artist Jenny Odell similarly emphasises how in a culture that cannot stand what looks like emptiness, leisure becomes a stent, "the critical pause during which the worker wonders why she works so much, where collective grief is processed, and where the edges of something new start to become visible".[10] It is precisely this political understanding of time that would allow one to look outward, imagining different "structural arrangements of power".[11] Quite frankly, it makes me want to punch the clock. And then punch it again.

CHILDREN OF TIME

"We are born and we learn to be children of time, as sea snails learn to be of the shores," Puerto Rican musician Residente tells us. Our beliefs about time profoundly shape our reality and how we consequently act in the world. Like money, the way we experience time only exists because of the meaning we give to it: our perception of time is

9 Tricia Hersey in Odell (2023).
10 Odell (2023).
11 Odell (2023).

culturally conditioned. In other words, it is a social construct, and constructs can be broken down. The moment has come to develop an understanding of time that is connected to the planet we live on. Reclaiming time is about returning to our humanity – our deeply rooted, deeply enmeshed humanity, entrenched in the bountiful ecosystems that support us.

In many indigenous cultures, time is experienced as cyclical and flexible. It shifts according to seasons and to people's and the earth's needs. Examples of cultures living in accordance with other temporalities are plentiful: Inuit, Maori, and Navajo, to name a few. Time, here, is abundant rather than scarce. In *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teaching of Plants*, Potawatomi botanist Robin Wall Kimmerer writes: "For in the popular way of thinking, history draws a time 'line', as if time marched in lockstep in only one direction. Some people say that time is a river into which we can step but once, as it flows in a straight path to the sea. But Nanabozho's people know time as a circle. Time is not a river running inexorably to the sea, but the sea itself – its tides that appear and disappear, the fog that rises to become rain in a different river. All things that were will come again."[12]

THEY HAVE CLOCKS, WE HAVE TIME

Nanabozho's people are not alone.[13] For example, in Aboriginal and Torres Strait Islander cultures, time is also cyclical, rather than sequential. In his book *Sand Talk*, Aboriginal scholar Tyson Yunkaporta writes how in his great-grandmother's language, there are no separate words for space and time.[14] On the Tiwi Islands off the Australian coast, time is read through the swelling of mango and the changing colour of carambola: "Here is a time that feels like never rushed and never lost. A time that always returns. A time in the rhythm of these fruits," writes researcher Alexander Van Vooren.

More ecological approaches to time, such as non-linear and relational ones, weave time into the fabric of the land, into the seasons, into the wind, the rain, and the soil. They follow the migratory patterns of animals in fluid motion. They are "embedded in the rhythms of ecosystems and seasons, our bodies, and in networks of (human and non-human) social relations and patterns."[15] In short, they take shape through environmental and social indicators. Instead of our temporal experience being determined by the quantity of time we have, where it becomes the means to one's ends, a more qualitative approach to time focuses on perpetual becoming.

12 Robin Wall Kimmerer (2013). *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge and the Teachings of Plants*. London: Penguin Random House UK.
13 Nanabozho's people are a group of culturally related First Nations from Canada and the USA, such as Ojibwe, Chippewa, Odawa, and Potawatomi (to which Kimmerer belongs).
14 Tyson Yunkaporta in Odell (2023).
15 Clare Hollins (2022). "Reflections on time, and how we care for one another". *degrowth.info*. 18 May 2022. Available at <https://bit.ly/4dnwBd6>.

DEEP TIME ADAPTATION

In her book, Jenny Odell looks at the capitalist approach to time in relation to climate change, calling it "the absurdity of racing against the clock at the end of time".[16] Since "the master's tools will never dismantle the master's house," as philosopher and activist Audre Lorde puts it,[17] Western timekeeping will never be an adequate tool to build new worlds. If we want to change, we need to adopt different temporal parameters. So, what if we considered time as abundant rather than scarce? What could reclaiming time then concretely look like in our societies?

Truth is, the answer will always be complex and nuanced. Concrete policy proposals such as working time reduction, a housework wage, or universal basic income are steps in the right direction. But cultural adaptation in the long term cannot be about finding pragmatic, silver-bullet solutions. It needs to take place on a much deeper and fundamental level. "We are not going to change any system of oppression without doing serious inner work and without thinking about how to heal and be in proper relation with nature," activist Nathan Thanki wrote on X. It is the only way to take the indoctrination out of ourselves. A paradigm shift always takes place on a collective and personal level at the same time, as an interactive exchange in perpetual motion. Cultures must adapt to changing contexts and "remain fluid enough to allow for continual emergence. No entity is immortal," says Yunkaporta. Not even clock time.

Just as seawater reshapes the coastline daily, we need more stories of change, stories that reshape our relationship to time within the living environment, where we can develop a language, thinking, and praxis that are appropriate to the complexity of the 21st century. Ultimately, these new narratives are going to have to be formed collectively. The community must organise. We must create spaces where that other time becomes the norm – spaces that allow the soft rocking of the waves, the coming and going of the tides, the rhythmic drumming of a heartbeat.

16 Odell (2023).
17 The title of an Audre Lorde essay originally published in Audre Lorde (1984). *Sister Outsider: Essays and Speeches*. Berkeley, CA: Crossing Press.

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MYTHS OF TRANSITION

AN INTERVIEW WITH
JEAN-BAPTISTE FRESSOZ

The importance of an energy transition from fossil fuels to renewables is now accepted as a fact and seen as a guarantee for decades of green growth. But the plausibility of energy transitions stems from a false history, argues historian of science Jean-Baptiste Fressoz: rather than being simply in competition with each other, different energy sources are also in symbiosis. How did the notion of energy transition come about, and what risks does it pose for meaningful climate action?

GREEN EUROPEAN JOURNAL: You argue that the idea of energy transition has no basis in the history of energy. Why?

JEAN-BAPTISTE FRESSOZ: The idea of energy transition is overly simplistic because you don't just shift from one energy source to another. If you look at the history of energy, it is obvious that coal did not replace wood, and oil did not replace coal. In the 20th century, for instance, wood energy increased in poor and rich countries alike.

All the historiography is focused on this idea of an energy transition, especially when it deals with the Industrial Revolution, which is generally understood as a transition from wood to coal. But this idea is false. Wood consumption increased along with coal use. True, this increase in wood was not linked exclusively to energy production. Wood was also used for paper, packaging, construction. But its consumption also increased for energy production because to extract coal, you need a lot of wood. In the 19th century, Britain consumed more wood in the form of pit props [used in coal mines] than it burned in the 18th century. This may not be firewood, but it's still used for energy production. So it's impossible to understand the rise of coal without thinking about timber. Without wood, Europe would have had very little coal, and hence very little steel, very little steam, and very few railways. Similarly, the increase in oil use did not reduce the consumption of coal. Still today, coal is indispensable for industrial production, of cement and steel in particular. Seventy-five per cent of steel globally is produced with coal.

We have to forget this idea of big shifts from one energy source to another. It doesn't work like that at all. Energy systems are intertwined. They are completely embedded in one another. Historians – and the general public with them – have been focused on the competition between energies, hence the notion of transition. But energies are both in competition and in symbiosis.

Why does it matter today?

Everyone is talking about a transition to clean energy, but the success of this notion and its appearance of plausibility derive from a false history. We've been accustomed to this idea that in the past, there have been several energy transitions, and if we have done it before through capitalist innovation, we just have to do it again. But what we are doing with new technologies such as solar panels, and to a lesser extent with electric vehicles, is not an energy transition. It's not the radical shift in technology that some people pretend renewables to be.

If what we are doing is not an energy transition, then what is it?

We are reducing the carbon intensity of the economy. The problem is not so much electricity generation, even though to produce wind turbines and solar panels you obviously need fossil fuels. Given that renewables divide by 20 the carbon intensity of electricity production, they are really worth pursuing.

The issue is rather what we are going to do with all this electricity. Electric cars represent progress compared to combustion engine cars, but they are not carbon neutral. In France, which produces a lot of nuclear electricity, it has been calculated that electric vehicles divide by three the carbon intensity of mobility compared to diesel cars. In most parts of the world, the numbers are even less impressive. All this shows that we are simply delaying global warming. What is conceived as a politics of transition is actually a politics of technological development, which is a fundamentally different thing.

It's important to understand things in these terms because when we talk of energy transition, we dream of an economy that is completely disconnected from carbon in three decades. And once we dream of that, we can think of an economy that continues to expand for centuries without altering the climate, and we don't need to talk about limiting production,

rationing, or redistributing. Thanks to the transition rhetoric, climate change demands a technological, not a social or even civilisational change. It's a convenient way of thinking of the climate crisis, but also a dangerous one because this shift is not going to happen. One of the key responses to the climate crisis should be a politics of redistribution.

Yet Europe is set to become the first climate-neutral continent by 2050. Isn't it on a path of transition?

This is just a self-satisfying narrative. Europe is heavily dependent on fossil fuels for all sorts of reasons. If you look at the national emissions of France or Britain, the two countries I've studied most closely, the picture seems quite gratifying: both countries are reducing emissions. But if you bring into the picture the CO2 emissions linked with international commerce, things are not moving fast enough. It's easy to decarbonise when you deindustrialise.

Besides international trade, rich countries are dependent for their prosperity on global growth. This is obvious in the finance and the service sector. London and Paris depend on the growth of the global economy, which is based on fossil fuels for the most part. Switzerland, for example, is an extremely prosperous country with low carbon emissions. But it has in its accounts some of the largest mining companies in the world, such as Glencore and Trafigura. Switzerland's prosperity is deeply enmeshed with coal and fossil fuels in general. So I think Europe needs to be careful about giving lessons to developing countries because this would be unfair.

What about China's energy strategy? Beijing is the global leader in green tech, but is also still heavily reliant on coal. Do you see a contradiction there?

China's energy landscape is only contradictory if you have a wrong vision of the dynamics of energy, which thinks of energy sources as if they were simply in competition with each other. But this is not always the case. In a way, China is the only country where things are happening fast. Around 80 per cent of the world's solar panels come from there. But China is still a developing country, with a much lower per capita electricity consumption than the US despite being far more industrialised. So it makes sense that Beijing is investing in all sources of energy.

For instance, China is developing huge solar and wind complexes in the Gobi Desert, as well as in its northern region of Inner Mongolia. These energy hubs are far away from where most of the electricity is consumed, so you need the infrastructure to transport electricity east and south, and this costs enormous amounts of money. To make this investment profitable, you need a coal-fired power plant near the solar and wind parks, because sometimes renewables need backup. An electrical system that functions exclusively on renewables remains, for the time being, a fantasy. This shows that the development of energy happens on different fronts at the same time, not just in the direction of renewables. Solar panels, in this case, are not in competition but in symbiosis with fossil fuels.

ENERGY SYSTEMS ARE INTERTWINED. THEY ARE COMPLETELY EMBEDDED IN ONE ANOTHER

If the notion of energy transition is fundamentally flawed, how did it impose itself?

In the beginning, the energy transition was merely an industrial slogan. The concept comes from a very self-interested discourse from the late 19th century. But until the 1970s, it remained very much on the fringes. Experts from different fields – geology, statistics, engineering, forestry, economics – did not speak of an energy transition because they were aware that energy doesn't work like that, with big shifts from one source to another. But there was one group of intellectuals who saw things differently: atomic scientists.

Atomic energy promoters thought of the future of energy over the very long term. They envisioned a scenario in which fossil fuels would become scarce and therefore uncompetitive, making the transition to atomic energy inevitable. So this idea of energy transition was initially a futurology, not an empirical analysis of what was happening. This imagined future of fossil scarcity was used as a justification to put public money into atomic research in the US.

The 1970s was a key decade for mainstreaming the energy transition narrative. With the energy crisis, talk of an "end of the oil age" became dominant in the political discourse and the public sphere, and the energy transition was presented as a solution. This popularisation of the notion of energy transition also came with a fundamental shift in its meaning: it became an empty container that everyone could fill with their own vision – it could be about coal, more oil, a new pipeline in

IN THE BEGINNING, THE ENERGY TRANSITION WAS MERELY AN INDUSTRIAL SLOGAN

Alaska, or research into new breeder reactors. That's the great strength of the energy transition: everybody is in favour of some version of it.

The environmental movement also embraced the energy transition narrative.

Yes, and this is a crucial point. US environmentalists of the 1970s bought into this very wrong discourse about energy because they wanted to be relevant. The energy transition narratives offered key figures of the environmental movement, such as Amory Lovins, the British representative for the environmental organisation Friends of the Earth, the opportunity to go from being purely oppositional, anti-nuclear activists, to having a positive agenda: a transition towards solar and wind energy. That agenda is what allowed Lovins and others to go to Washington, talk to US President Jimmy Carter, and become respected consultants.

The Intergovernmental Panel on Climate Change (IPCC) has played a major role in informing government action and public discourse on climate. Did it also contribute to popularising the idea of energy transition?

The IPCC's Working Group III is focused on solutions. In the beginning, it was led by American experts who were overly climate-sceptical. They wanted to calm down the climatologists and give voice to agriculture, energy, and industry (including fossil fuel) experts. Group III was then dominated by the expertise produced in the US by people like William Nordhaus, the first economist working on climate change, who won the Nobel Prize in 2018. Nordhaus' vision for the energy transition was that yes, there is climate change, but we shouldn't do anything, except invest in research and development (mainly in nuclear energy). In his view, it was better to delay the transition until the technologies were ready. So the transition narrative was essentially a way to justify procrastination.

This was the perfect discourse for the US administration at the Rio Conference in 1992. Everybody was looking to the US, the largest global emitter and the richest country. Offering the prospect of a technological solution to climate change meant that Washington didn't have to take action.

Much has changed since the 1990s, but not to a drastic extent. Following the 2015 Paris Agreement, "transition" became the pivotal term in the Group III report. Indeed, to stay within the 2-degree Celsius threshold, a radical reduction in the use of fossil fuels is imperative.

The idea that innovation and technological progress will save us from climate change has not gone away. What would be a healthy attitude towards climate tech?

We should be neither technophobes nor technophiles, but have an adult vision of technology and look at what is realistically possible.

Nordhaus had this notion of "backstop technology", which started with the oil crisis. The idea was that we would never run out of energy because there would always be technology ready to replace exhaustible sources – in his mind, nuclear power and the breeder reactor would replace fossil fuels. He had the same view on climate change: backstop technologies will solve it.

Today, Group III is still relying on a sort of backstop technology: "negative emissions", whether through direct air capture (DAC) or bioenergy coupled with carbon capture (BECCS). These and other dubious technologies took huge prominence in the last two IPCC reports. This shows that there is an issue with mainstream economic expertise on climate change, reflected in the work of Group III, which we should be able to address without discrediting the IPCC process as a whole.

What is the relationship between the success of the energy transition narrative and climate adaptation?

The energy transition discourse is not in opposition to climate adaptation. Both are discourses of procrastination. Again, we need to look at the 1970s. In that decade, the very same climatologists who raised the alarm about global warming defused it at the same time by saying, We will be fine because we'll do an energy transition before the climate crisis. It takes around 50 years, they said, to do an energy transition. Of course, they had no clue how long it would take because they had never done one, but the idea was there.

However, it soon became clear that this wouldn't be the case. Serious modelling efforts that were made at the time showed that there would be fossil fuels in the distant future and in larger quantities, especially because of the

ongoing economic development in Asia. The late 1970s were also the time when everyone understood that nuclear plants would not be as successful as expected a decade earlier. The Three Mile Island nuclear accident in Pennsylvania, US, contributed to that realisation. There was a huge push towards coal, also fuelled by China's plans to rely massively on coal between then and 2000.

So by the early 1980s, it was already quite clear that climate change would happen. Between 1976 and 1982, there were three conferences on climate adaptation in the US. The attitude was quite optimistic for the country. Plus 3 degrees Celsius by 2100? Sure, the US can adapt. Agriculture will be the most affected sector, so agricultural production will be relocated. There will be GMOs, the techno-fix of the time.

There was optimism, but also a great deal of cynicism: US experts knew that for other countries it might be more difficult to adapt. They were aware that there would likely be mass migration, which they saw as a form of climate adaptation. So transition was about postponing action, and adaptation is what happens when you keep postponing it.

If what we are currently doing is simply reducing the carbon intensity of the economy, what should we be doing instead?

I am fascinated by how many of my colleagues look at the sudden growth of renewables as a sign that we are on a transition path. Even if renewables grow exponentially, it doesn't mean that fossil fuels are following a symmetrical curve of decline. The diffusion curve of renewables is not a replacement curve. So we should keep lowering the carbon intensity of the economy, but we also have to talk about degrowth, rationing, and reducing material consumption.

Forty per cent of global electricity is already decarbonised, and we should continue in that direction. But for material production (cement, plastics, steel), solar panels are not really a solution. It's not impossible that they will become one in the future, but they won't have such a big impact in these industrial sectors by 2050. So we have to reduce material consumption.

To do that, we should be discussing the social utility of CO2 emissions. We're not going to cut all carbon emissions, but we can ask the question, Is this CO2 useful? Or is it a luxury emission? Cement, for instance, is going to be very difficult to decarbonise, but it can be very useful, for example to build pipes in the developing world and give people access to clean water. However, if cement is used to build yet another motorway in Europe or the US, then the social utility of those emissions is much more questionable.

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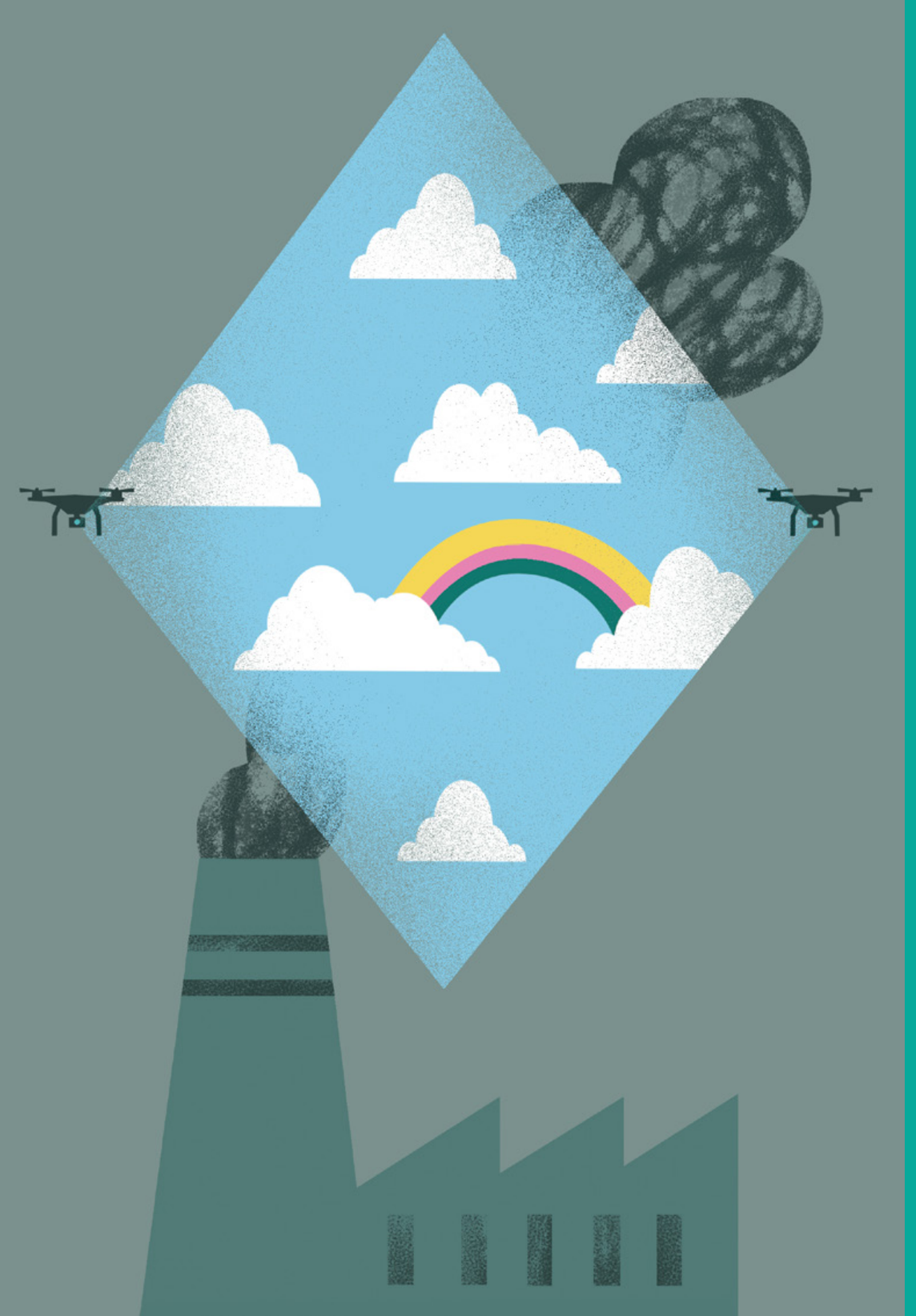

THE PROMISES AND PERILS OF GEOENGINEERING

ARTICLE BY
MARTIN VRBA

With decarbonisation proceeding too slowly and the Earth overheating faster than expected, some voices within the climate movement are starting to advocate for publicly funded research into solar geoengineering technologies. Is the case for once-unthinkable climate solutions growing stronger?

Rogue billionaire T. R. Schmidt develops a launcher to shoot massive amounts of sulphur into the stratosphere. His goal is straightforward: to cool our overheated Earth and thus stymie the havoc that climate change is causing. His efforts inspire both hope and terror, splitting the world into two camps: those opposing his experiments, and those favouring them.

This is the basic synopsis of *Termination Shock*, a 2021 novel of speculative climate fiction by Neal Stephenson. The book presents some of the key controversies surrounding solar geoengineering technologies: their unforeseen consequences for the environment, the absence of international cooperation on their use, and the dangers of their unilateral deployment by private actors without public oversight.

But it also echoes some of the experimentation currently underway. In 2022, US startup Make Sunsets, owned by Schmidt's real-life alter ego, American entrepreneur Luke Iseman, released two weather balloons in Mexico's Baja California. They contained sulphur dioxide. The purpose was to spread the chemical in the stratosphere to deflect sunlight and then measure the cooling effects.

The experiment provoked a strong response from the Mexican government, which began drafting new legislation to ban any unauthorised use of climate-altering technologies. Having become the first country to adopt solar geoengineering laws, it then began lobbying other countries to create common planetary standards on the use of such technology. But so far, there is neither political nor scientific consensus on whether solar geoengineering efforts (otherwise known as solar radiation management – SRM) could do more harm than good.

COOLING BY UNNATURAL MEANS?

Geoengineering refers to attempts at cooling the planet by two very different methods: removing carbon dioxide from the atmosphere, or deflecting incoming solar radiation.

Of the two, the first – known as carbon sequestration or carbon capture and storage (CCS) – is usually the less controversial, partly because it can be done by natural means. For example, "negative emission strategies" like soil-based carbon sequestration aim at storing carbon in agricultural soil.

There are good reasons for putting our hopes in the ground. Soils contain two to three times more carbon than the atmosphere, and plants consume about one third of the CO2 that humans produce. According to estimates, soils could sequester over a billion additional tonnes of carbon each year. In practice, such "carbon farming" would push agricultural farmers to focus more on certain kinds of perennial crops, such as miscanthus, poplar, willow, or conventional grasses, that store higher amounts of carbon in the soil.

Carbon can also be captured and stored underground by technological means. As philosopher Benjamin Bratton characterises it, "Instead of taking something out of the ground and spitting it into the sky, you're taking something out of the sky and putting it in the ground." While the most effective way of doing that is contested, the necessity of carbon sequestration is not. In March 2024, the measured concentration of carbon dioxide in the atmosphere was 425 parts per million (ppm) – a 50 per cent increase on pre-industrial figures.

According to environmental organisation 350.org, as well as many climate scientists, the "safe" level of CO2 in the atmosphere is 350 ppm. That implies that not only do we need to stop emitting additional carbon into the atmosphere, we also need to capture a lot of the carbon already there. This is why the oft-cited target of achieving a net zero economy is not enough. In 2024, we are already in what French philosopher Bruno Latour called a "new climatic regime". If we want to stabilise our climate, we must follow a negative emissions scenario.

OF ALL THE POSSIBLE SOLUTIONS TO THE CLIMATE EMERGENCY, SOLAR GEOENGINEERING SEEMS TO BE THE LEAST DESIRABLE

LEARNING FROM NATURAL DISASTER

The real controversy starts with the second method of geoengineering. By deflecting solar radiation, some of the sun's heat won't make it into our atmosphere, and so won't be trapped by the greenhouse effect. This partial desolarisation will have a cooling effect on the Earth's surface. Its most discussed and developed variant so far is "stratospheric aerosol injection" (SAI). This is what Make Sunsets, and for that matter, T. R. Schmidt, were experimenting with, and is inspired by a natural occurrence: the eruption of a volcano, and the atmosphere-cooling aerosols that this produces.

When Mount Tambora in Indonesia erupted in 1815, it released a massive cloud of particles that quickly spread by stratospheric jet streams, eventually forming an invisible cloud of aerosols across the Earth. For years after, the global climate cooled (according to simulations, by approximately 1 degree Celsius). The following year became known in Europe and North America as a "year without summer". It saw mass movements of people, failed harvests, famines, food riots, epidemics, and social unrest across the world. It is those cooling effects that have attracted the attention of some researchers who argue we may need to include these technologies in our climate strategy.

A CAPITALIST RUSE?

Of all the possible solutions to the climate emergency, solar geoengineering seems to be the least desirable. Climate movements and discourses usually consider it a delusional technofix, if not a delaying strategy of the fossil fuel industry to make its decarbonisation efforts appear less urgent. After all, if we start to believe we can effectively manipulate the climate, governments might be even less inclined to phase out fossil fuels at the speed that's required.

Even worse could be the consequences of such massive intervention in an otherwise fragile climate system. Disturbance of weather patterns, widespread damage to ecosystems, planetary pollution, a decline of public health – with risks like these, what is there to discuss?

There is a strong anti-industrial current in the green movement that regards technology and technological civilisation as a problem in and of itself, and instead advocates for nature-based solutions. It argues that it is our alienation from the natural world that has caused such indifference to planetary health, and that we therefore need to reconnect with nature rather than rely on technological solutions. Similarly, the anticapitalist green left sees geoengineering as a capitalist pseudo-solution.

Experts have also expressed their reservations. In 2022, concerned scientists from universities and research institutes across the world launched a "solar geoengineering non-use agreement" initiative. In an open letter, they called for "immediate political action from governments, the United Nations and other actors to prevent the normalisation of solar geoengineering as a climate policy option". More than 450 scholars have since signed the letter. According to signatories, any attempt to open a discussion on solar geoengineering would simply legitimise what should remain a taboo. The initiative is primarily an attempt to tighten existing restrictions – after all, a partial moratorium on the development of solar geoengineering was declared during the UN Convention on Biodiversity back in 2010.

However, excluding solar geoengineering from the set of legitimate options for tackling the warming of the planet could backfire. Holly Jean Buck, Assistant Professor of Environment and Sustainability at the University at Buffalo in New York, argued in her response to the open letter that if a ban on geoengineering were to be enforced, any possibility of publicly funded and transparent research into its risks and benefits would vanish. That in turn would open the field to hazardous, clandestine, and illegal research that could result in scenes like the one portrayed in Stephenson's novel. In short, if research is banned, the risk of rogue and irresponsible trials of geoengineering methods increases.

GEOENGINEERING AS AN EMERGENCY RESPONSE

In May, *The Guardian* surveyed hundreds of climate scientists from the Intergovernmental Panel on Climate Change (IPCC), asking them what degree of global heating they expect. The results are sobering: almost 80 per cent of respondents foresee temperatures rising at least 2.5 degrees Celsius above pre-industrial levels.[1] A 2018 article published in *Nature* had already shown there was a "good chance" that the "safe" threshold of 1.5 degrees Celsius would be breached by 2030, rather than by 2040 as the IPCC predicted. This, the authors of the article argued, was a result of three trends: rising emissions, natural climate cycles, and declining air pollution.[2]

1 Damian Carrington (2024). "World's top climate scientists expect global heating to blast past 1.5C target". *The Guardian*. 8 May 2024. Available at <https://bit.ly/4bgXwpv>.

INTERNATIONAL COOPERATION WOULD ENABLE US TO BETTER UNDERSTAND BOTH THE RISKS AND POSSIBILITIES OF TECHNOLOGIES WE KNOW SO LITTLE ABOUT

"Governments are cleaning up air pollution faster than the IPCC and most climate modellers have assumed," the authors of the paper noted. "Aerosols, including sulphates, nitrates and organic compounds, reflect sunlight. This shield of aerosols has kept the planet cooler, possibly by as much as 0.7°C globally."

The climatologist James Hansen followed with warnings that reducing... aerosol emissions from industries, especially shipping, might cause an increase in global temperatures.[3] In other words, air pollution has so far been doing what stratospheric aerosol injection aims to do: cooling the planet using the reflective properties of small particles. In a way, we are already geoengineering the planet – not intentionally, but as a side-effect of industrial pollution.

In China, a decade-long fight against pollution caused a 90 per cent drop in sulphur dioxide emissions, which saved hundreds of thousands of lives but contributed to a 0.7-degree increase in the country's average temperature over the same period.

With an overshoot scenario (crossing the 1.5-degree threshold) becoming more likely, it is no surprise that some progressive voices have started to take the idea of solar geoengineering seriously.

A PATHWAY TO DEEP DECARBONISATION

In a recent collection of essays edited by Andreas Malm, Holly Jean Buck, and J. P. Sapinski, a group of authors reflect on whether geoengineering efforts might be needed in the era of temperature overshoot. Contrary to the critique that geotechnologies are mere capitalist technofixes that shield governments from the need for radical transformation, Malm, a prominent voice in the climate movement, argues that solar geoengineering could achieve long-term success provided that there is a shift from a free market economy to democratic planning. In this scenario, a central planner would lead a tem-

2 Yangyang Xu, Veerabhadran Ramanathan, David G. Victor. (2018). "Global warming will happen faster than we think". *Nature*. 5 December 2018. Available at <https://bit.ly/3WD1KTJ>.

3 Bob Berwin (2021). "The Rate of Global Warming During Next 25 Years Could Be Double What it Was in the Previous 50, a Renowned Climate Scientist Warns". *Inside Climate News*. 15 September 2021. Available at <https://bit.ly/4dBHisz>.

porary effort to implement a global solar geoengineering programme in which all states collaborate for the public good, and from which private, profit-oriented actors are excluded.

The book makes a plea for a "critical political ecology of geoengineering", arguing that we should avoid technophilic and technophobic presuppositions about these technologies and instead consider them part of a complex, well-composed climate emergency strategy of deep decarbonisation and adaptation.

It's also a strategy that, according to a recent study, is gaining currency among countries in the Global South. "The distinguishing feature between Global North and Global South that emerges as most significant [when it comes to how geoengineering is viewed] is the (mean) age of a country's population," it notes. "Those living in a country with a younger population [...] tend to express significantly greater support for climate-intervention technologies." It is a part of a broader trend in which younger generations who will experience the effects of the climate crisis well into the future tend to be more receptive in general to responses to it.

NO ENGINEERING WITHOUT RESEARCH

Rather than passing moratoriums on geoengineering and thereby opening the door to private and unmonitored endeavours, the international community should aim at doing what Buck and others (including UN-appointed experts) have advocated for: creating a "a global network of climate research centres to produce reliable and legitimate solar geoengineering research".[4] This international cooperation would enable us to better understand both the risks and possibilities of technologies we know so little about.

According to Buck, a model for such a network could be the CGIAR centres that promote food security, agroecology, and research to prevent famine. Unfortunately, however, we are nowhere near such an arrangement: geoengineering research is scattered, marginal, and lacking in public funds. Currently, the leading centre of solar engineering model-making is the Harvard Solar Geoengineering Research Program (HSGRP), which is backed by 16 million dollars in philanthropic funding from individuals and private foundations. Such a lack of public oversight is neither desirable nor necessary.

Currently, there are at least two publicly funded research programmes that are worth mentioning: the Earth's Radiation Budget (ERB) Initiative within the US National Oceanic and Atmospheric Administration, and the EU's GeoEngineering and Negative Emissions pathways in Europe (GENIE). Contrary to various moratorium initiatives, the best way forward may be to expand such public infrastructure, taking the field of climate-altering technologies towards international cooperation and interdisciplinary research.

Done transparently and in consultation with the public, research will be the best way to determine whether solar engineering should become part of a viable climate strategy or if it is a technological dead end whose perils outweigh its benefits. As philosopher Peter Singer puts it, "We currently have no idea whether the risks of attempting SRM outweigh the risks of not attempting it. We would be wise to try to find out."[5]

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4 Holly Jean Buck, Simon Nicholson (2023). "Solar geoengineering research in the global public interest: A proposal for how to do it". *One Earth*, Volume 6, Issue 12, pp. 1652-1664. Available at <https://bit.ly/4ajS03V>.

5 Peter Singer (2023). "Should We Research Geoengineering?". *Project Syndicate*. 12 April 2023. Available at <https://bit.ly/4bihGzt>.

LAND TO THE RIVER

PLANNED RELOCATION IN THE NETHERLANDS

ARTICLE BY
CHLOÉ TEN BRINK

Built on land that was reclaimed from wetlands and the sea, the Netherlands has a long history with landscape engineering and flood protection. But in some areas of the country, growing climate risk is prompting the return of land to water, raising social and ethical dilemmas around equity and sustainability.

Between the early 2000s and 2015, an area known as the Noordwaard – located between the Nieuwe Merwede canal and De Biesbosch National Park in the south-west Netherlands – was transformed from an agricultural polder[1] into an active floodplain. The project was part of a nationwide policy programme entitled "Room for the River" (Ruimte voor de Rivier), the aim of which was to reduce flood risk by working with nature rather than against it – namely by expanding floodplains. According to official figures, more than 60,000 people are now at a significantly lower risk of flooding as a result of the Noordwaard project. In order to achieve this, however, the households that inhabited the polder were either obliged to move away from the area entirely or onto newly constructed artificial mounds known as "terps".

Prior to Room for the River (RftR), the Noordwaard was home to a small agricultural population of under 100 households. When the area was returned to the river ("depoldered"), inhabitants faced a multi-year relocation process. Those with houses either in the planned permanent flood zone or who would be at risk of seasonal flooding once the project was completed were obliged to relocate. They received compensation equal to the market value of their dwellings (calculated prior to the devaluation induced by the project), but no other financial or housing search assistance was proposed on a systematic basis. Of the area's 24 farming households, 10 stayed, and of the 48 non-farming households, 25 remained – all on top of the newly built terps.

1 A piece of land reclaimed from a body of water and enclosed by embankments (dykes).

In the face of the growing existential threats of climate change such as sea-level rise and coastal erosion, planned relocation – also known as "managed retreat" in this context – is a necessary adaptation strategy. The organised displacement of a community is based on the notion that the most effective way to reduce risk is to remove oneself from it. This is a policy that irrevocably changes the lives of those affected and raises a range of governance issues: it is costly, time- and capacity-intensive, and tends to be unpopular politically, not just among those directly impacted.

Whether drawn to areas with fertile land or fleeing an environment turned inhospitable because of a natural disaster, societies and local communities have always moved in response to landscape change. Relationships to land have consistently been influenced by risk and perceptions of it. Climate and more general environmental adaptation are a continuation of this. Relocations will occur whether planned or not, either after sudden-onset events such as earthquakes or hurricanes or as a pre-emptive reaction to slow-onset events or predicted risks such as sea-level rise. This constitutes a form of climate-induced displacement or migration.

In order to foster equitable and sustainable outcomes in planned relocations, it is crucial to incorporate a justice perspective. This helps shift the focus of relocation policies towards empowering the communities concerned, hearing their voices, and recognising their needs. Going beyond immediate risk, it recognises and, where possible, rectifies historical injustices and acknowledges local culture and identity. Transparency and engagement in the decision-making process and policy design are fundamental to the justice perspective.

HANDLING AND COMPENSATING FOR LOSS

Planned relocation induces loss. This includes financial loss – of property – but also a range of intangible losses: loss of a sense of place, of community, of "home". For many families, their home is their most valuable asset. But it also tends to be a place of emotional significance, of memories. In the Noordwaard, the only tool to address these losses was compensation of the market value of the property, destined to fund its replacement.

Certain provisions were put in place to mitigate issues such as social cohesion; those who wished to stay in the Noordwaard but relocate to a terp could choose to stay in the same neighbourhoods, for example. But other non-monetary factors were not taken into

RELATIONSHIPS TO LAND HAVE CONSISTENTLY BEEN INFLUENCED BY RISK AND PERCEPTIONS OF IT

account. For instance, there was no psychological counselling or general support available to deal with the emotional distress that can result from such an upheaval. More and more research[2] is pointing to the need to accompany and support individuals affected by policies such as planned relocation. However, planned relocation projects are already cost intensive, even without the provision of additional support. The total cost of the Noordwaard project – including landscape engineering, new infrastructure, and household compensation – came to 300 million euros.[3]

Another concern with an over-focus on financial compensation is that it can overlook a key stakeholder group: tenants.[4] If property owners alone qualify for government compensation or assistance, those in rental accommodation within relocation zones will be left to fend for themselves. In order to ensure just or equitable relocations, assistance must also be given to tenants to help them navigate this uncertain time.

The issue of compensation is one of distributive justice, i.e. the fair allocation of resources within society. Material compensation does not impact everyone equally. Farmers were a key demographic in the Noordwaard. During the relocation process, those who chose to move away from the area received assistance with locating new farmland as sizeable tracts of land are harder to find than standard houses. Those who relocated to the terps also had access to areas of farmland, but these were typically smaller than their previous holdings due to the limited amount of space available.

Many Noordwaard farmers were unsatisfied with the outcomes of the relocation process; post-landscape engineering, the land is harder to farm given the regular flooding that now occurs, as well as the increasing importance of nature in the area. In an interview, a representative of the Dutch water authority, the Rijkswaterstaat, summarised the situation as "taking a big slice of land, which was seen as farmland, and giving it back to… Well, we say giving it back to the river, in terms of safety. But what you're really saying is we're giving it back to nature. Nature and agriculture are […] still fighting with each other."[5]

ECOLOGICAL JUSTICE

Ecological justice – centred on the notion that human beings are not the only object of ethical concern and that the needs of ecosystems, flora, and fauna must also be taken into account – is easily left out of the mainstream justice discourse. This is because our primary focus is often environmental disparities with impacts on humans. However, with policies such as managed retreat that so fundamentally reshape landscapes and communities' relationships to them, it would be remiss not to consider the wellbeing of nature.

Floodplains are particularly important ecosystems: freshwater is equal to 0.01 per cent of Earth's water and yet is home to 6 per cent of all discovered species.[6] The EU's network of protected areas, Natura2000, consists of 30 per cent floodplains, attesting to the importance of this type of ecosystem in Europe specifically.[7] Adjacent to De Biesbosch National Park, the Noordwaard has become a significant space for biodiversity: species such as sea eagles and black-tailed godwits (listed as "near threatened" on the IUCN Red List of Threatened Species) have returned to the area. This revival was facilitated by the use of nature-based solutions to manage flooding, from planting willow trees, which help reduce wave size, to introducing mammals such as water buffalo that graze the floodplain and keep it open, ensuring water flow.

In the Noordwaard, these management choices and the accompanying biodiversity restoration were facilitated by the designation of "spatial quality" as the second priority of the project after flood risk reduction. While this has no clear definition, it encompasses various elements that contribute to the perception and usability of a space, including aesthetic appeal, functionality, and accessibility. It is a way of ensuring that a programme benefits all stakeholders. Thanks to this objective, elements such as new cycle paths and nature-observation platforms were integrated into the Noorwaard project, turning the floodplain into a recreational space.

Planned relocation of this type can, at worst, result in both the misuse of the vacated land and the environmental destruction that accompanies

2 Philipp Babcicky, Sebastian Seebauer & Thomas Thaler (2021). "Make it personal: Introducing intangible outcomes and psychological sources to flood vulnerability and policy". *International Journal of Disaster Risk Reduction*, 58 (May 2021), 102169.

3 Dutch Water Sector (2015). "Room for the river programme completes its largest depoldering project Noordwaard, the Netherlands". 14 October 2015. Available at <https://bit.ly/43EKRK0>.

4 While this issue was not specifically observed in the documentation and research on the Noordwaard project, it remains important, in particular as tenants are more likely to experience financial vulnerability than home owners.

5 Interview carried out by the author in October 2023.

6 David Dudgeon et al. (2006). "Freshwater biodiversity: importance, threats, status and conservation challenges". *Biol. Rev. Camb. Philos. Soc.*, 2006 (May), 81(2), pp.163-82.

7 European Environment Agency (2024). "Global and European sea level rise". 15 January 2024. Available at <https://bit.ly/4aCVQFW>.

ECOLOGICAL JUSTICE IS EASILY LEFT OUT OF THE MAINSTREAM JUSTICE DISCOURSE

the construction of new homes. At best, it can be an opportunity to produce co-benefits for biodiversity and the fluvial ecosystem. The Noordwaard project exemplified the latter. However, relocations also occur that have no relation to risk adaptation. People and communities have been and continue to be moved for reasons such as development or mining. A well-known example is the German village of Lützerath, evicted in 2023 to make way for the expansion of a lignite mine. In these cases, the costs for the environment and the communities concerned are even higher.

COMMUNITY INVOLVEMENT

Another crucial aspect of the execution of managed retreat is procedural justice, i.e. the fairness and legitimacy of the decision-making process. Are community members given a choice? Can they make their views heard? How is access to information facilitated? Affected individuals and households need to be able to meaningfully consent to these processes that will fundamentally alter their lives.

In the case of the Noordwaard, community-wide information sessions and kitchen table discussions were held to find a solution for the householders concerned. Many of these took place in the Biesbosch MuseumEiland, a local history museum but also a community hub. A Rijkswaterstaat representative was also present in the Noordwaard for over 13 years, from the planning stages to the execution of the depoldering. These forms of community participation do not, however, amount to co-production or co-design, in which different knowledge sources and diverse stakeholders are actively involved in the policy design process and implementation.[8]

Beyond its facilitation role, the Biesbosch MuseumEiland is also the holder of the documentary record of the evolution of the Noordwaard as well as the history of De Biesbosch and local traditional livelihoods. It also runs interactive exhibitions for children, allowing them to understand how flooding and floodplains work through play. Handling change and loss also means remembering it.

As a general rule, recognising the historical and cultural context of the land – and using this knowledge to inform decision-making – is essential for the success of planned relocation. Land and a sense of place are often crucial to local culture, identity, and heritage. Efforts can be made to integrate local knowledge in the policy design process, honour religious or spiritual sites, and provide avenues for the continuity of local culture.

8 Fiadh Tubridy, Mick Lennon & Mark Scott (2022). "Managed retreat and coastal climate change adaptation: The environmental justice implications and value of a coproduction approach". *Land Use Policy*, Vol. 114, March 2022, 105960.

BEYOND THE NETHERLANDS

The nature-sensitive approach adopted in the Noordwaard is an outcome of the Netherlands' long history with water and flooding. The country is famous for its distinctive geography, having been essentially built on land that was reclaimed from freshwater wetlands and the sea. The country's innovative landscape engineering and water management is renowned to the point that its expertise in this field is seen as a profitable export. Significant events such as the North Sea Flood of 1953, sometimes referred to as De Ramp (The Disaster), and the Meuse River floods of 1993 and 1995 pushed forward the development of flood protection measures. The latter also provoked discussions on a perceived overreliance on hard engineering approaches to flood management.

While RftR responded to the increasing risk of flooding linked to rivers, the Netherlands has another looming issue, namely sea-level rise. With 26 per cent of the country lying below sea level, 60 per cent of the Netherlands is prone to coastal flooding.[9] In 2022, the global mean sea level was the highest measured so far. Under a high warming scenario, a sea-level rise of up to 2 metres compared to current levels is predicted by 2100.[10] Despite the Netherlands' impressive flood defence systems, the question remains whether this will lead to new planned relocation projects and how the country will evolve in its relationship to risk.

In Europe, planned relocations – whether due to sea-level rise or other environmental pressures such as drought or land degradation – are not unique to the Netherlands. For example, the English coastal village of Happisburgh is exploring relocation options in an effort to adapt to the risks posed by climate change. And following the heavy flooding of the Danube in 2013, a planned relocation plan was put in place for a range of municipalities located in the Eferding Basin region of Austria. This is just a snapshot of a growing interest in government-led planned displacements due to environmental pressures in Europe.

While this demonstrates that displacement is not simply a problem of "the other", developing countries may well have fewer means at their disposal to mitigate its impacts. In the Netherlands, for instance, the Room for the River initiative was allocated a budget of around 2.3 billion euros.[11]

Limited budgets pose significant challenges to planned relocations. Insufficient funds

9 Robert Slomp (2012). *Flood Risk and Water Management in the Netherlands: A 2012 Update*. Rijkswaterstaat. Available at <https://edepot.wur.nl/241151>.
10 Jos van Alphen, Marjolijn Haasnoot & Ferdinand Diermanse (2022). "Uncertain Accelerated Sea-Level Rise, Potential Consequences, and Adaptive Strategies in The Netherlands". *Water*, 2022, 14(10), 1527. Available at <https://doi.org/10.3390/w14101527>.
11 DutchWaterSector (2015). "Room for the river programme completes its largest depoldering project Noordwaard, the Netherlands". 14 October 2015. Available at <https://bit.ly/43EKRK0>.

LAND AND A SENSE OF PLACE ARE OFTEN CRUCIAL TO LOCAL CULTURE, IDENTITY, AND HERITAGE

may result in inadequate infrastructure, a lack of social services, and compromised environmental assessments, all of which are likely to exacerbate the vulnerability of displaced communities. The challenges and risks communities face will vary significantly depending on their cultural, socio-political, and geographical contexts.

While it is important not to fearmonger or to catastrophise human displacement, the increasing impacts of climate change are disproportionately affecting vulnerable communities, especially those in the Global South, as will climate migration. Moreover, as the impacts of climate change become stronger and more frequent, climate migration is likely to increase significantly. Central to this issue is the notion of habitability, i.e. the suitability of an environment for human habitation or occupation. As climate change progressively renders land uninhabitable, for instance as a result of severe droughts, humans will be forced to move to survive.

In more extreme cases, the existential threat is posed at a national level. The low-lying islands that make up Tuvalu in the Pacific, for example, are facing rising sea levels that have pushed them to include managed retreat inland in their National Adaptation Strategy and to seek international options. The recently established "climate migration visa" incorporated into the Falepili Union Treaty signed with Australia in 2023 enables 280 Tuvaluans annually to migrate to Australia in direct response to climate change, marking a significant step towards realising these efforts. Should sea-level rise become even more critical, total migration may need to be envisaged, although this is not a locally popular option. Overall, projections for climate migration vary widely and should be taken with a pinch of salt, but the bottom line is that it is time for proactive measures to address these rising challenges.

Though planned relocations are just a small example of how climate change and increasing environmental risks will likely transform our communities, they raise questions of justice that will be broadly relevant for climate adaptation. Vulnerability to environmental risks is often unequally distributed and raises a range of issues and inequalities that cannot be ignored. True resilience requires not only building physical infrastructure but also addressing underlying social, economic, and political inequalities and creating mechanisms of support and opportunity where possible.

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WHAT OF THE BODY ON THE LAND?

This text was developed by **TRACY AMOFA** in collaboration with 1.2 Diaries.

For many in the Global South, climate impacts can translate into an existential threat that forces them to seek refuge elsewhere. But safety – even in fortified, distant lands – may only be temporary.

What is there to say of a land under the sea when they believe their walls are strong enough to keep the water out?

Do I tell them I come from a land with droughts and a sea at its shores? They tell me it's hard to believe. They ask from which region I fled and if there was a conflict. The only conflict was the bodies fighting the land to feed them, digging holes as deep as trenches only to fill them with the little water left. I say the conflict was one against hunger and thirst. I am asked whether I was at risk of being sold and if there were beasts after my body. I tell them I cried without tears as I fed on the last food my husband found and watched as he journeyed for more, only to not return. I tell them of the child who almost ate me alive, only to die before I could push it out. I ask them how I could survive water because all I have known is the lack of it. I tell them I'd drink it, but I heard I would drown when the barriers go down. I know how to keep walking, but I have never learned to swim. They say the land will survive as it always does; the water could not kill it! I laugh because I have seen dead lands, I have personally witnessed their deaths as I passed through them. How could they speak of the land with no regard for it? Do they not know it's what's keeping us?

I ask them if I am allowed to survive along with the land. They allow me to learn to swim as they evaluate what I last endured. I am a body that wants to enact the longevity of the land. If the land knows to continue to exist, I, too, want to sustain my body. When does the swimming class start again? ■

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SOCIETY OF THE MELTING SNOW

TEXT BY
MICHAEL SCHMID
PHOTOGRAPHY BY
FLORIAN RAINER

In Austria, skiing is an integral part of popular identity, but the impact of global warming is pushing winter sports higher and higher – both in terms of altitude and social class. Demographic changes and the inadequacy of tech fixes force us to question skiing monoculture. Yet, for now, alternative visions for the alpine region are struggling to take root.

Sonnenkar, 2023

"On Friday night I put the skis/On my car and then I drive/To Stubaital or Zell am See/Because there, on top of the mountains/They always have the best snow!"

So begins Wolfgang Ambros' *Schifoan* (Skiing), one of Austria's most popular pop songs. For nearly 50 years, this paean to skiing has been more than just essential background music to Austria's winter entertainment; it could almost be said to be the alpine republic's unofficial anthem.

But five decades after its release, all is not well on top of the mountains. Climate change and the associated rise in temperatures are depriving many ski resorts of their most important resource: snow. This is particularly the case in the lower-lying ski areas of Austria. Even the usual fixes are not working: as soon as the thermometer hits 3 degrees Celsius, artificial snow cannot settle, rendering the snow cannons useless. Smaller resorts are the worst affected, given the cost of operating the cannons when they do work: artificial snow costs around 3.5 to 5 euros per square metre to generate. Since the turn of the millennium, more than 20 Austrian ski resorts have had to close, and once well-used cable car operators have gone into administration.

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This article is available in German on the *Green European Journal* website.

Translated by Paula Kirby | Voxeurop

This may become a source of acute national pain. Ever since the 1970s, Austrians have held the sport – and its heroes like Franz Klammer and Annemarie Moser-Pröll – in high regard.

A SPORT FOR ALL

The 1970s were a decade of new beginnings and growth for Austria. Until then, this small country at the edge of the Iron Curtain had been largely overlooked. But the economic prosperity and social liberalisation engineered by Chancellor Bruno Kreisky brought international attention – and a breath of fresh air – to what had been a rather sleepy and

Gipfelbahn, 2023

conservative country. Along with it, Austrians gained a previously unknown self-confidence.

The economic upturn prompted a significant rise in incomes in the country. Between 1971 and 1976, they climbed by up to 13.8 per cent each year, and for the remainder of the decade continued at up to 8.9 per cent annually. The rise of skiing and winter tourism was integral to this development, and is part of the collective identity of generations of Austrians. On 5 February 1976, children were let off school at 11 am to follow the downhill race at the Innsbruck Winter Olympics live on television or radio. When Franz Klammer, who hailed from a tiny village in the Austrian Alps, won the gold medal, the whole country erupted in a frenzy of joy.

Klammer was followed in the 1990s by Hermann Maier, who, after crashing spectacularly in the Men's Downhill race at the 1998 Winter Olympics in Nagano, Japan, went on to win gold medals in both the Giant Slalom and the Super-G. It could have been a plot from a Hollywood movie: former bricklayer goes straight from catastrophic failure to the ultimate sports success. For decades, epic tales like this about the heroism of Austria's skiing stars were hugely important for the mood of the entire nation.

The popularity of these new stars led to a growing love of skiing as a pastime. What had started out as an elitist leisure activity for the well-heeled was transformed into a sport for all. Affordable skiing lessons enabled children throughout the country to learn the basics. And alongside this, ski tourism became a significant contributor to the economy. Once barely visited valleys flourished, and people's fortunes were transformed. Until the early 20th century, thousands of children from smallholder families in Tyrol and Vorarlberg had been taken to so-called *Hütekindermärkte* (herder children markets) every year, where they were hired out for the summer to rich farmers in southern Germany, who generally treated them like serfs. Now, though, the business opportunities created by the rise of ski tourism have meant that the descendants of those children have achieved considerable prosperity.

SHIFTING SNOW LINE

The figures from the Austrian Chamber of Commerce speak for themselves. In 2022 there were nearly 70 million overnight stays as a result of winter tourism, generating a revenue of 12.6 billion euros and 6.7 billion euros in value-added income. The sector employs around 250,000 people, and approximately 70 per cent of the income from winter tourism is generated in alpine regions. Furthermore, ski tourists spend around 25 per cent more per person per day than summer visitors on average. For several decades now, developments in the supply and demand for skiing holidays have enabled Austria to benefit from two almost equally profitable tourist seasons. Tyrol is a particularly good example of this: in 1965 it had just 5 million overnight stays in the winter season, but by 2019 (before the pandemic) that figure had risen to over 27 million. Since 1995, it has regularly had more tourists in winter than in the summer.

This successful model is now under threat. Yet the realisation that climate change will lead to massive changes in Austrian ski tourism is not new. As early as 2013, a study commissioned by the Federal Ministry of Economy found that 1 degree Celsius of warming would, by 2030, shift the snow line upwards by about 150 metres. This would leave around 190 Austrian ski resorts below the natural snow line, meaning that the tourism industry in those areas would need to create new offerings if it was to survive. State Secretary for Tourism Susanne Kraus-Winkler is well aware of this. In response to questions from the *Green European Journal*, her office wrote, "In addition to traditional winter sports, lower-lying areas in particular will need to come up with new tourist offerings unrelated to skiing." Nevertheless, Kraus-Winkler is confident that "state-of-the-art snowmaking systems, sustainable ascent aids, and innovative design will ensure that Austrian ski resorts are fit for the future."

Nassfeld, 2023

The Chamber of Commerce agrees. Of Austria's 23,714 hectares of piste, 75 per cent are now equipped with snowmaking systems, which, according to the Chamber, "guarantees perfect skiing right through to the end of the season". To ensure this remains the case, cable car operators are constantly striving to open up new high-alpine areas. All the same, even in supposedly snow-sure zones, the dramatic consequences of climate change are becoming increasingly obvious. When the Alpine Ski World Cup season opened in Sölden in late October 2023, the races were held on a narrow band of artificial snow surrounded by scree, despite taking place in a glacier region at an altitude of around 3000 metres.

Eiberg, 2023

A recent study on the shift to higher alpine resorts provides a sobering analysis of the trials Austria faces. "The increasing melting of the glaciers and permafrost will pose challenges for these ski resorts, too," write its authors, Anna Burton and Oliver Fritz from the Economic Research Institute and Robert Steiger from the University of Innsbruck. Quite apart from the climate-induced limits placed on the use of artificial snow, its production requires huge quantities of water and energy. For instance, the annual electricity needed to make snow on Austrian ski slopes could meet the needs of 60,000 households, and the 47.1 million cubic metres of water sprayed by the snowmaking systems each year would be enough for 235,000 households.

Despite this, the Chamber of Commerce is convinced that this approach is sustainable: 90 per cent of the energy used for the snow cannons comes from renewable sources, cable car operators have reduced their energy consumption by 20 per cent over the last 10 years, and 100 per cent of the water from the artificial snow is returned to the natural cycle, it claims.

BEHAVIOURAL CHANGES AND INNOVATION

Burton, Fritz, and Steiger, however, see a clear need for changes to ski tourism. "Climate change is the main factor, but demographic changes and higher costs resulting from rising prices are also forcing an adjustment in the offering." Their reference to demographics is significant, since it is not just about changes in the age pyramid. The people who learned to ski in the 1970s are now reaching retirement age and are often no longer as active as they used to be, or have found other forms of physical activity. There are also far fewer ski schools now than there were in the industry's heyday. Additionally, climate change has led to the closure of many smaller ski areas near Vienna, Graz, and Linz, meaning that children now seldom ski outside the school holidays. Higher numbers of migrants in those urban centres, who either cannot afford a skiing holiday or simply have little interest in the sport, have also contributed to its decline in popularity among the general population.

Burton, Fritz, and Steiger also anticipate "a shift in demand towards the summer and shoulder seasons", and add that "climate protection efforts centred on climate-friendly guest travel to and from the resorts must be intensified." Currently, approximately 80 per cent of Austria's ski tourists travel by car, causing enormous but avoidable exhaust and noise pollution in the narrow alpine valleys. Many Austrian ski resorts can be easily reached by a combination of train and shuttle services. Furthermore, no one needs to take their full ski equipment with them: of the 396,000 pairs of skis sold to Austrian retailers in the 2022/23 season, 70 per cent were hired out – and this is a rising trend.

Kay Helfricht, a mountain researcher with the Austrian Academy of Sciences and co-author of an international position paper entitled "Prospects for snow sports in the face of climate change", states that, for winter sports to reduce their carbon footprint, measures such as "not creating snow on the entire piste, but only where it is actually needed" will be required.

The position paper contains a number of recommendations, including determining where the harmful climate impacts of sectors and businesses are, and creating "a basis for business decision-making with respect to climate protection"; carrying out site-specific vulnerability analyses to document the sensitivity and adaptive capacity of the respective winter sports areas; and, most importantly of all, "the implementation of sustainability and resilience strategies to improve the robustness and adaptability of winter sports and strengthen their capacity for innovation in all relevant fields of activity".

A MOUNTAIN CODE

This problem is not a uniquely Austrian one. Since the 1990s, 18 ski resorts have closed (and their ski lifts dismantled) in Germany , while 10 have closed in South Tyrol in Italy. The decline in Switzerland is even more dramatic: by the end of 2022, 69 ski resorts had shut their doors and only one of them, San Bernardino, dared to open up again for the 2023/24 season. Three hundred million Swiss francs (a little over 300 million euros) is set to be invested in that resort over the coming years, with investors pinning their hopes on its altitude: the San Bernardino ski slopes are between 1600 and 2500 metres above sea level, meaning that, at the very least, it will still be possible to create artificial snow for the foreseeable future.

But there is some cause for hope. A scheme by the Austrian Alpine Association is pointing the way to a more sustainable alpine future. The "Mountain Villages" initiative brings together 38 villages in Germany, Switzerland, and Italy, all of whom have pledged to uphold the principles of the Alpine Convention. These include the preservation and protection of natural and human habitats in the Alps through the principles of prevention, polluter pays and cooperation. The mountain villages see themselves as "model regional development centres that showcase sustainable alpine tourism with all its relevant traditions", with a particular focus on "excellent quality in terms of landscape and environment and [commitment] to the preservation of local cultural and nature conservation values". They also emphasise "communal responsibility, capability, and independence, as well as [...] the environmentally-aware and responsible conduct of guests when staying in the mountains".

A1, 2024

Almdorf, 2024

Small family businesses, the use of traditional local products, and connectedness are at the heart of the project, which also insists on the greatest possible restraint in the expansion of resorts and other large-scale tourism infrastructure in the mountain region. "The aim is to create close ties between producers and consumers at the local and regional level, as well as to ensure the long-term conservation and care of the typical elements of the cultural landscape," say its organisers.

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SUSTAINABLE WELFARE:
SOCIAL PROTECTION IN TIMES OF ECOLOGICAL CRISIS

ARTICLE BY
MATTEO MANDELLI, TAUBE VAN MELKEBEKE & PHILIPPE POCHET

Europe's welfare states face unprecedented challenges from the ecological crisis and its social fallout. Can sustainable welfare deliver the EU's needed ecological transformation in a socially just way?

The EU's attempts to tackle the ecological crisis consist of public policies aimed primarily at reducing emissions. These span sectors such as energy, industry, agriculture, housing, transport, and spatial planning. While recent data reveals progress in, for instance, the industrial and renewable energy sectors, areas such as transport, housing, and agriculture are lagging behind.

Insufficient progress in these latter areas shouldn't come as a surprise. The imperative to address emissions is accompanied by significant societal implications, namely the potential of green transition policies to both exacerbate vulnerabilities and create new ones. This comes on top of the threats produced by the ecological crisis – for example, through heatwaves and floods – and the current lack of a proper adaptation policy offer.

Indeed, both the direct impacts of the ecological crisis and those of the green transition are creating a new wave of social risks. These affect particular social groups in different ways: workers facing industrial restructuring because of the transition; low-income households grappling with higher energy and commodity costs; and marginalised communities affected by destructive environmental conditions.

As the world heats up, the already fragile foundations of European welfare states are under unprecedented pressure. Not only do ecological challenges and the policies designed to respond to them create and exacerbate social risks that require increased public social expenditure, but the structures and aims of existing welfare states are also not fit for this new reality. Today's social protection systems were built during a different time, with different social risks. They are, as a consequence, unequipped to diminish carbon and material footprints.

European welfare states thus occupy a complex position in the era of ecological crisis. On the one hand, there is a need for expanded social policies – in both expenditure and scope – to protect societies from intensifying risks; on the other, measures must be taken to ensure that social policy also successfully addresses the ecological crisis. Overcoming this catch-22 will require transformative changes in European welfare states, both at the level of EU social policies and national welfare systems, to align social and ecological objectives, foster synergies, and minimise trade-offs between the two.

WELFARE WITHIN PLANETARY BOUNDARIES

Against this background, the concept of "sustainable welfare" is emerging as an alternative in both academic and political circles. It aims to meet human needs within planetary boundaries, taking into account both intergenerational and global perspectives. Using the language of Kate Raworth's "doughnut economics",[1] we can say that sustainable welfare seeks to guarantee a social foundation by satisfying essential needs for all while respecting the ecological ceiling, as defined by planetary boundaries. It pursues an equitable redistribution of resources and opportunities, as well as the preservation of a safe ecological space for human and non-human activities.

Indeed, to make welfare states fit for the current era of ecological crisis, sustainable welfare is indispensable. It would advance mitigation efforts while protecting citizens from the new risks stemming from mitigation policy. And it would also protect humans against the effects of the ecological crisis and advance the EU's adaptation agenda.

To put this alternative paradigm into practice, a new range of public policies, integrating social and ecological goals, is needed. These are often referred to as eco-social policies. Various proposals for eco-social policies have been put forward recently by both academics and advocacy groups, from Universal Basic Services (water, transport, and housing, for example) to Participation Income. In spite of a lively debate, however, these policies currently remain more aspirational proposals than

1 Kate Raworth (2018). *Doughnut Economics: Seven Ways to Think Like a 21st-Century Economist*. London: Penguin Random House.

TODAY'S SOCIAL PROTECTION SYSTEMS WERE BUILT DURING A DIFFERENT TIME, WITH DIFFERENT SOCIAL RISKS

concrete political realities, making sustainable welfare a seemingly distant utopia. The "siloisation" of governance, in other words, the lack of collaboration across different policy domains, as well as short-termism, appears to be a key barrier.

BUILDING ON THE JUST TRANSITION

The closest the EU has come to such an eco-social policy approach is its "just transition" narrative, which acknowledges that decarbonisation disproportionately affects certain groups. The EU's just transition policy framework is characterised by the "leave no one behind" catchphrase, which featured prominently in the 2019 European Green Deal.

A first attempt to put this catchphrase into practice came through the establishment of the Just Transition Mechanism. This mechanism addresses the social and economic effects of climate mitigation, focusing on the regions, industries, and workers who will face the greatest challenges. These are primarily those involved in the phase-out of coal and other fossil fuels. It is a targeted policy effort that should help to mobilise around 55 billion euros over the period 2021 to 2027.

A second, more recent policy instrument designed to deliver on the EU's just transition aspirations is the Social Climate Fund. Put forward in 2023, this new fund is meant to compensate vulnerable energy and transport consumers for the costs that will result from the new Emissions Trading System for buildings and transport (ETS 2). It will amount to about 87 billion euros and run for five years beginning 2027.

Finally, another notable concrete policy measure from a socio-ecological perspective is represented by the Council Recommendation of 16 June 2022, which seeks to ensure "a fair transition towards climate neutrality". This aims at setting out guidance to member states on the necessary policy packages so that no one is left behind in the green transition.

On top of these ad-hoc, Green Deal-related initiatives, other existing EU tools can be used to deliver the just transition, including the Cohesion Fund, the Recovery and Resilience Facility, and the Modernisation Fund. Some EU countries have also introduced similar policies at the national level, one notable example being Spain's Just Transition Strategy.

POLITICAL TAKEAWAYS

From a political point of view, it is imperative to understand how the establishment of the European just transition framework was made possible. A first takeaway is that the appearance of urgent social risks successfully exerts pressure on welfare states to introduce new eco-social policies. This was the case with the accelerated phase-out from fossil fuels in several EU countries, which propelled governments to pay attention to affected workers and communities.

Second, just transition policies often originate from negotiated pacts between socio-political actors seeking to promote the green transition and actors representing at-risk categories (for instance, trade unions and the governments of carbon-intensive regions). These two sides find a compromise solution in the just transition concept, which allows them to establish successful coalitions instead of coming to loggerheads.

Third, once the just transition discourse enters the political agenda, it seems to easily attract broad consensus, including among big energy companies, trade unions, and climate activists. The just transition narrative makes everybody feel that they can gain something, and in this sense it appears to be much less contested than a mere decarbonisation strategy that doesn't address its social impacts.

USEFUL BUT INCOMPLETE PATCHWORK

While representing a move towards finding synergies between social and environmental protection, the EU's "leave no one behind" narrative is also flawed.

If the green transition is understood as a process, then it ignores the fact that many groups (homeless people, for instance, or other marginalised communities) are already excluded at the outset. The European just transition narrative does not pull such people in.

Moreover, it ignores the inconvenient truth that overconsumption is a key issue, both from an ecological and an equality point of view. The ecological crisis is human-made, with widely varying shares of responsibility. In Europe, a person from the richest 1 per cent emits on average 14 times more carbon than a person in the bottom 50 per cent. The "leave no one behind" paradigm does not place enough emphasis on the fact that high emitters will need to drastically change their behaviour.

These gaps in the just transition narrative are reflected in the policies designed to pursue it. Instruments like the Just Transition Fund and Social Climate Fund exemplify the EU's approach to addressing the social impacts of the green transition through compensating certain groups of citizens, but they will not be able to deliver at the required scale to prevent or protect people from new risks. Indeed, the European just transition policy framework can best be described as a hotchpotch of helpful yet non-transformative initiatives that, at most, enable some relief for a segment of the European population.

This unfulfilled framework is a key factor in explaining why, despite a growing understanding of, and concern for, the ecological crisis, support for the European Green Deal is diminishing. Indeed, the green transition faces a range of challenges, not least the populist narrative that co-opts insecurities and risks and weaponises fear in order to impede swift action. This narrative is extremely dangerous, given that halting climate action will exacerbate long-term consequences for the most vulnerable and dramatically increase future adaptation costs.

REFORM AND ADAPT

Considering the mounting risks, it is critical to deliver the green transition in a speedy manner. Doing so will require stepping away from the current patchwork approach, towards one that is truly just, and therefore, transformative: sustainable welfare.

Putting sustainable welfare central on EU policymakers' agendas won't take things back to square one. We already have a solid, formalised framework to build on. This institutional framework goes back to the introduction of modern welfare states in the late 1800s across Europe. Established to protect people against the risks of industrialisation – in many ways a juncture as significant as today's – the welfare state has arguably been one of the most positive political projects ever seen on European soil. With the climate, environmental, and biodiversity crisis worsening along with its social impacts, it is now time to reform and adapt the welfare state to protect citizens from new risks.

And there is more. We already have strong momentum with the EU's just transition framework. Although this is far from the transformative ideal that sustainable welfare advocates, it should not be taken for granted, but rather welcomed as a step in the right direction. Albeit incomplete, the European Green Deal, with its ambition to leave no one behind and its establishment of policies that venture into previously untouchable member states' competences (in particular with the Just Transition Fund and the Social Climate Fund), is a quantum leap for the EU.

TRANSFORMATIVE ECO-SOCIAL POLICIES

From a policy perspective, putting this aim in practice shouldn't be viewed as a rigid either/or exercise. Instead, multi-pronged efforts can provide a pathway towards sustainable welfare.

Some pragmatic policy reforms can have an immediate impact while also leading the way to transformative change. A concrete example is the decarbonisation of the entire healthcare infrastructure.[2] Another would be the expansion of social protection schemes to include new risks such as extreme weather events and industrial restructuring. A third is the relatively simple proposal to strengthen the scope and timespan of the existing funding mechanisms, in particular the Social Climate Fund and the Just Transition Fund, thereby turning their reactive nature into a potentially preventive one. On the financial side, Europe's Structural and Investment Funds and the EU's multiannual financial framework should be directed towards creating the space to deliver much-needed resources to eco-social initiatives.[3]

These proposals could enable bigger leaps towards sustainable welfare and more transformative eco-social policies. For example, decarbonising the healthcare infrastructure could lead policymakers from different sectors to develop a practice of working together that would enable them to establish common goals towards an eco-social systemic governance. Meanwhile, including new risks in welfare systems could inspire governments to experiment with innovative eco-social measures. Additionally, the strengthening of EU funding for a just transition could propel an eco-social reinforcement of European governance mechanisms, such as through the establishment of a needed Just Transition Observatory or a stronger focus on eco-social goals, indicators, and policies in both the European Semester and the governance of the Energy Union.

Finally, the mainstreaming of sustainable welfare goals in budgetary and cohesion policy would unlock transformative thinking at the highest policy level and instigate an essential transformative whole-of-governance approach. In this sense, the just transition policy framework connected to the European Green Deal may represent a rare case of positive path dependence, whereby the current framework provides the seeds for incremental development.

These eco-social policy proposals are not just theoretical concepts. They can be put at the heart of the move towards sustainable welfare.

POLITICAL ALLIANCES

Empirical evidence shows that just transitions come about as a result of well-functioning democratic policy processes that respond to new societal risks and problems, allow potentially conflicting actors to find common

IT IS NOW TIME TO REFORM AND ADAPT THE WELFARE STATE TO PROTECT CITIZENS FROM NEW RISKS

2 Philippe Pochet, Taube Van Melkebeke (2024). "*Climate Emergency and Welfare States*". Knowledge Communities Political Brief (February 2024). Green European Foundation. Available at <https://rb.gy/2yj5z0>.

3 For other examples, see Sebastiano Sabato, Milena Büchs & Josefine Vanhille (2023). "A just transition towards climate neutrality for the EU: debates, key issues and ways forward". OSE Paper series (No. 52, May 2023). European Social Observatory. Available at <https://rb.gy/hgi4w9>.

THE GREEN TRANSITION WILL NOT BE SOCIALLY FAIR IF IT IS NOT DEMOCRATICALLY JUST

ground, and ensure broad societal consensus for policy changes.

The same evidence nevertheless shows that this democratic process also conceals barriers to a more transformative paradigm shift towards sustainable welfare. Indeed, policymaking in modern democracies suffers from short-termism and context dependency, and its yearning for consensus often leads to watered-down policy solutions. Yet the green transition will not be socially fair if it is not democratically just. Therefore, a pressing question remains: what can be done to turn sustainable welfare and eco-social policy proposals from a theoretical ideal to a politically successful reality while ensuring the transformation is democratic?

One solution would be enhancing socio-ecological alliances. These alliances have been key to driving just transition processes in Europe, and they will need to be strengthened if they are to weather harsher political conflicts, such as those we can expect as the green transition and the ecological crisis proceed. This can be done in several ways.

First, solidifying green-progressive partisan collaborations and establishing formal partnerships between trade unions and environmental NGOs could serve as an effective initial step. At its core, strengthening socio-ecological alliances would involve bridging the divides among the different groups, some that typically support environmental policies and others welfare policies. It is crucial that these two groups become, or remain, politically united rather than forming alternative alliances. The policy proposals mentioned above could give input to, and help structure, these alliances.

Second, to activate socio-ecological coalitions, democratic engines should be reinforced. To this end, it would be crucial to revamp social dialogue, an institution that has been key for the expansion of the welfare state. Through the formal involvement of membership-based societal organisations – typically trade unions and business groups – social dialogue has enabled inclusive policymaking for decades, making sure that nobody is left behind. This institution should be brought back and adapted to the context of the ecological crisis, by including green interests and by making sure not to disproportionately favour economically powerful actors.

Finally, another important step in strengthening socio-ecological alliances would be to give political voice to those societal groups that are often marginalised despite inherently embodying social and ecological interests. This includes, for instance, care sector workers who provide essential services within planetary boundaries but currently lack adequate political representation. In this sense, putting public service unions at the centre of the green transition and encouraging their mobilisation could be an effective strategy to steer transformative sustainable welfare changes.

BUILDING ON EXISTING GROUND

Sustainable welfare is arguably the most promising policy framework at hand to deliver the EU's ecological transformation in a socially just and fair way. It has the potential to protect citizens from new risks, thereby acting as a form of adaptation. And also it brings the EU within planetary boundaries, thereby helping to mitigate the ecological crisis.

From a political perspective, Europe might seem far away from adopting this new framework. In reality, however, it is not. The skeleton is already in place, in the form of our current welfare states. And the newly established EU Just Transition Framework is a clear step in the right direction, one that must be reinforced and built upon. Quick wins and transformative policy options can be combined to lead the way and should be at the heart of a revamped coalition of green and progressive voices all over Europe. Just as we cannot have strong social welfare states without a safe climate and environment, we cannot avert the ecological crisis without social justice. And no socio-ecological transition can take place without a truly democratic process.

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The Land Defender's Call

Protests against extractive projects, whether ridiculed or violently quashed, are critical defences of nature and wellbeing, both under attack from global corporations, oligarchs, and complicit governments. Indigenous peoples give voice to the change in vision necessary for a stronger position in challenging times.

TARA HOUSKA (Couchiching First Nation) is an attorney, land defender, and mother. She is the founder of Giniw Collective, an Indigenous-women, two-spirit-led collaborative committed to environmental protection and life in balance.

Laughter and the buzz of conversation drift across the United States Capitol concrete steps. The sun is shining brightly as an anti-pipeline protest song picks up voices.

One by one, the folks with interlocked arms are walked off by a single police officer as onlookers cheer. Citations are issued, demonstrators rejoin the crowd. New friendships and connections are made. After the banners are rolled up, the crowd disperses to their evening plans.

Two thousand miles away, next to a giant steel pipe cutting through the forest, the same protest song tries to pick up steam. It is quickly replaced by confused shouting and pained voices. Indigenous protestors and allies are being maced and tackled to the ground by police in riot gear. Private security guards hired by the pipeline company surround the group and chat with officers in a waiting paddy wagon.

Those in cable ties will spend days or weeks in a cell, facing charges ranging from simple trespass to domestic terrorism. The story is in the local media, then the national news. Elected officials pick up their phones to discuss the pipeline. A state environmental justice committee is created. A proposed domestic conservation policy gains another sponsor. And the pipeline keeps barrelling through the forest.

Ten thousand miles away, another land defender has been assassinated. Their grieving family calls for justice, for an end to the industrial project with its hired mercenaries and deadly toxins. A lithium mine for electric battery production is poisoning the water; the animals are all sick and so are those who still live off the land. The murder of the land defender makes a media cycle: their death is added to the total reported annually by the United Nations, by global non-profits. Another resolution calling for human rights is passed by a committee. A financial institution pledges to strengthen its human rights standards. And on the ground, the fighting intensifies. Sometimes the colonising extractors even pack up and leave.

Intentional arrest as a pressure tactic spans generations and movements. Sometimes arrest is no more than a citation. At other times, it is a calculated risk to delay the progression of an extractive project and create more pressure. In other places, arrest is a deadly risk. In every instance it is part of a movement ecosystem pushing for change.

Yet, too often in climate spaces, particularly those led by the so-called West, civil disobedience garners responses ranging from amusement to annoyance. The "real work" – climate policy, aspirational goals, electrification of the grid – is being done with little to no acknowledgment of what it takes to achieve substantive, lasting change. Consumerism and decolonisation are almost entirely absent concepts. Indigenous land stewardship is largely relegated to romanticised imagery and phrases.

Civil rights are not and have never been comfortably won. It defies logic that oligarchs and corporations destroying the natural world for profit would be any less violent to change than oppressive regimes benefitting the few. It defies logic to trivialise human beings responding with immediacy and urgency to report after report speaking of climate boiling, tipping points affecting billions of creatures, species extinctions. It is almost as if those with the macro solutions can envisage no other way of being than that which has brought humankind to this point, that we are utterly incapable of reclaiming our collectivity, our purpose beyond extractivism and creature comforts.

After decades of learning from my people's knowledge keepers, from the web of life and the Indigenous values that have kept eighty per cent of the world's biodiversity alive, I understand the risks I take defending the physical Earth with acts of love for a relative. To me, the Earth is not a summation of resources to be consumed. It is a living, breathing relative who we must be in mutuality with for our own survival.

Our foolish, short-sighted, arrogant beliefs that we have dominion over nature got us here. It is no less foolish, short-sighted, and arrogant to believe we can solve the climate crisis we are waging from the mindset of dominion. Survival means necessary, radical repair of our relationship with nature, which can and must take numerous pathways, including personal risk for the benefit of all.

These direct acts are neither cutesy nor extreme. Neither are they a silver bullet in this fight that is both intergenerational and existential.

In my experience as a land defender calling out from some of the last beautiful, healthy places under siege by endless greed, I've found bravery and selflessness to be a source of inspiration for people all over the world living through the bleakness of climate science and overwhelming existentialism. I've found standing collectively and physically with the Earth to be a pathway to directly reframing the narrative of the world we can envisage while providing a glimpse of reconnection through an act of love.

Some direct actions lay bare the weakness of destroyers, bound by the same physicalities as we all are. I cannot adequately convey the eyes of a person who has stopped a multi-national industry from its planet-killing for a few hours, for a few days, for a few months or even years. It is power. It is empowerment. It is reclamation. Our Mother needs us, with all our empathy and rejection of the disconnection killing us all. I hope more of us realise our hearts and our humility are just as critical as our minds when we choose to stay or go. ■

POLITICS OF THE FUTURE

ARTICLE BY
BEATRICE WHITE

Long-term thinking is often absent from electoral cycles and policy processes designed to respond to short-term concerns. To change this, some states are endowing future generations with formal representation and legal rights. Can commitments to future citizens enhance wellbeing and representation in the present?

The major crises we have faced in recent years – the Covid-19 pandemic, Russia's invasion of Ukraine, extreme weather events caused by climate change – all share a common aspect: a lack of preparedness on behalf of policymakers gravely undermined the effectiveness of the response. Many drew the same lesson from these divergent experiences: governments must strengthen their capacities to apprehend risks, anticipate challenges that lie ahead, and take measures in the present that will avoid or lessen the impact of future crises.

Although we cannot predict the future, we have never had more data and expertise to inform how we confront the problems we face. Responding to emergencies as they arise, rather than allocating greater resources and attention to identifying warning signs and developing prospective future scenarios, is therefore a political choice. The former is the approach that most often prevails today. The response of EU lawmakers to the recent farmers' protests that took place across Europe was to backtrack on environmental commitments in a bid to quell the agitation rapidly.

Why is it proving so difficult to break out of this crisis mode? The diagnosis is now well known: our politics suffers from a lack of joined-up thinking; it is linear and often patchwork. Policymakers lack incentives to think beyond short-term electoral cycles given the absence of accountability mechanisms that extend beyond a few years. This has led to a growing realisation of the need for mechanisms to legally mandate policymakers to take into consideration the interests of future citizens.

A shift in this direction is already underway. Regard for future generations is implicit in concepts such as sustainable development and the precautionary principle that are now well established in policymaking. No longer merely the stuff of science fiction or symbolic declarations from international bodies like the UN, initiatives to enshrine formal rights and protections for future generations are growing around Europe and beyond.

WHAT IS BEHIND THE SHIFT?

Legal researchers Renan Araújo and Leonie Koessler have explored the rise in constitutional provisions relating to future generations in recent decades.[1] Whereas up until the 1960s, fewer than 10 national constitutions explicitly referenced future generations, as of 2021, 41 per cent (81 out of 196) did so. They explain that, although such provisions have been present in written constitutions since 1789, in the past, future generations were primarily referenced in symbolic terms or through abstract provisions. Over the past half-century, there has been a notable shift towards assigning constitutional rights and duties to future generations in different contexts, such as the environment and the economy. They identify this trend as part of a broader "linguistic and substantive turn" whereby constitutional language has increasingly come to resemble that of international human rights treaties.

The countries that have introduced constitutional protections for future generations are spread throughout the world. In Europe, it is a mixed picture: France, Germany, and Portugal are among the countries that have taken this step, while other countries have not included these protections in their fundamental charters ("large-C constitutions") but rather in their "small-c constitutions" – the broader body of constitutional rules that derives from sources such as judicial decisions, treaties, conventions, etc. The Urgenda case in the Netherlands, in which a citizens' group brought and won a historic case against the government regarding its legal duty to prevent climate change, is a key example. This case, and many others like it, emerged from citizen-led campaigns to apply pressure on policymakers to honour their climate commitments.

1 Renan Araújo & Leonie Koessler (2021). "The Rise of the Constitutional Protection of Future Generations". *LPP Working Paper* No. 7-2021, Available at SSRN: https://ssrn.com/abstract=3933683.

POLICYMAKERS LACK INCENTIVES TO THINK BEYOND SHORT-TERM ELECTORAL CYCLES

Growing ecological consciousness among the general public and campaigning by civil society and youth movements have been instrumental in pushing for more long-term thinking in politics. Yet the drive also stems from concerns in areas such as technology, demographics, health, and the economy. As a result, there has been a proliferation of structures (academic bodies, research institutes, etc.) dedicated to understanding these risks. It was the pandemic, for instance, that provided the impetus for the Wellbeing of Future Generations Bill, introduced to the UK Parliament by Conservative MP Simon Fell.[2] The bill sought to mandate preventative spending in a range of areas, and was underpinned by primarily economic arguments. Philosopher William MacAskill, meanwhile, has highlighted the risks we face relating to technological development, including a loss of control, either to a small number of powerful corporations or to technology itself.

BEYOND THE HUMAN

Ideas of morality and justice are also a basis for long-term political thinking. Strong longtermism holds that the lives of future generations are inherently as valuable as those of people alive today. It follows the same logic that upholds our social contract and underpins ideas of universal human rights – that the lives of strangers are as valuable as those of our own families and immediate communities. MacAskill argues that expanding the franchise to represent future generations requires a cultural shift, in the same way as when women were given the vote.[3] This cultural shift seems to be underway, evidenced by the spread of currents of thought such as longtermism, effective altruism, and degrowth, and the rise of concepts such as the wellbeing economy and intergenerational justice in the political debate.

2 The bill did not become law as it failed to pass all stages before the parliamentary session ended in April 2022 and thus was not taken further.

3 William MacAskill (2022). *What We Owe The Future: A Million-Year View*. London: One World Publications.

WEALTHY COUNTRIES TREAT THE FUTURE AS A DISTANT COLONIAL TERRITORY WHERE THEY CAN DUMP ECOLOGICAL AND TECHNOLOGICAL RISK

Philosopher Roman Krznaric and others have framed the campaign for greater long-term thinking as a global movement for "decolonising the future".[4] He argues that wealthy countries treat the future as a distant colonial territory where they can dump ecological and technological risk with no regard for its inhabitants. This perspective views safeguarding the future of generations to come as indissociable from protecting the environment. For this reason, the movement to formally recognise the rights of future generations is often viewed as intertwined with the movement to grant legal rights to nature and non-human beings.

These movements have also been gaining ground in recent years. Countries such as Austria, Brazil, Egypt, Germany, India, Luxembourg, Slovenia, and Switzerland have established constitutional provisions directly protecting the interests of animals.[5] The EU recognises animal sentience explicitly in several parts of its legislation, notably in Article 13 of the Treaty on the Functioning of the European Union (TFEU).

In 2008, Ecuador became the first country in the world to recognise the Rights of Nature in its constitution. In New Zealand and India, rivers were granted legal personhood in 2017. Around the world, many of the struggles to grant legal rights to natural entities have been led by indigenous communities or regional and local structures. These campaigns do not seek to endow natural entities with rights for their own sake, but rather to avert damage and destruction that poses an existential threat to the survival and livelihoods of human communities.

How to give representation and a political voice to animals, nature, and citizens yet to be born raises important questions for democracy. Moving beyond symbolic recognition to actions with tangible consequences will of course affect the current population. Will governments be faced with trade-offs that require them to choose between maximising social welfare in the present and protecting the future, as some fear? Or, far from being a zero-sum game, can commitments to future generations enhance the wellbeing of the current population?

4 Roman Krznaric (2021). *The Good Ancestor: How to Think Long Term in a Short-Term World*. London: Penguin.

5 Jessica Eisen (2017). "Animals in the constitutional state". *International Journal of Constitutional Law*, Volume 15, Issue 4, October 2017, pp. 909–954. Available at <https://doi.org/10.1093/icon/mox088>.

Looking at how initiatives to protect future generations have affected policymaking and brought about material consequences provides useful insight into how these dilemmas play out in different contexts.

HUNGARY: FROM THE VANGUARD TO THE SIDELINES

In Hungary, a promising start failed to translate into a mechanism that can meaningfully hold policymakers to account. In 2007, the Hungarian parliamentapproved the creation of an Ombudsman for Future Generations, to be elected by the parliament, with a mandate to safeguard the right to a healthy environment. Sándor Fülöp, who occupied the post between 2008 and 2012, is credited with several achievements, including preventing the privatisation of Hungarian public water utilities and halting plans for the development of a straw-fired power plant in the Tokaj region, a valuable natural heritage site.

By establishing a direct link between the environment, the interests of future generations, and basic constitutional rights such as the right to a healthy environment and physical and mental health, Hungary's constitution can be viewed as pioneering in this area. However, in 2012, the position was downgraded to Deputy Ombudsperson, and subsequent reforms implemented by Viktor Orbán's conservative government have led to a severe weakening of the institutional framework protecting future generations.

WALES: MAKING A DIFFERENCE

In 2015, the devolved government of Wales adopted the Well-being of Future Generations (Wales) Act, which commits national and local government, along with local health boards and other specified public

CAN COMMITMENTS TO FUTURE GENERATIONS ENHANCE THE WELLBEING OF THE CURRENT POPULATION?

bodies, to pursuing seven wellbeing goals. These goals relate to aspects such as health, equality, resilience, culture, and global responsibility. The act was accompanied by the appointment of a Future Generations Commissioner, tasked with ensuring accountability and oversight.

Speaking in Brussels in early 2024, Sophie Howe, who occupied the position between 2016 and 2023, explained how the Act was the result of a process of national dialogue in Wales. This process invited citizens to "optimistically set goals" and "co-create a vision and solutions". She added that it was essential to go beyond vague principles, to set goals concerning tangible metrics such as life expectancy, and to take meaningful action to reach them.

Beyond a merely symbolic step, the Act has had concrete impacts. In 2019, for instance, the Welsh government decided to scrap plans to build a motorway in the Newport area. Explaining the reasoning behind the decision, the first minister said that the environmental impact of the proposal made it incompatible with the Act.

ELSEWHERE IN EUROPE

The Urgenda case in the Netherlands is not the only incidence of a state being challenged to uphold its commitments to future generations. Article 20a of Germany's constitution commits the state to protecting the "natural foundations of life" as part of its "responsibility toward future generations." The article had little impact until 2021, when a landmark verdict ruled parts of the Federal Climate Change Act incompatible with fundamental rights for failing to set sufficient provisions for emission cuts beyond 2030, thereby violating the constitutional freedoms of future generations. With its ruling, the Constitutional Court effectively extended the right to life and health to future generations, setting a significant precedent.

Other notable examples in Europe include Finland's Committee for the Future, established in 1993 as a parliamentary body to conduct research on the social effects of technological development. In Portugal, civil society actors collaborated with policymakers to establish a "Framework for Intergenerational Fairness" – a practical tool to evaluate public policies. In 2023, a citizens' initiative led to the parliament of Spain's Balearic Islands passing a law on the wellbeing of present and future generations.

THE EU'S MISSED OPPORTUNITIES

Currently, the EU does not have explicit provisions in its treaties that would compel it to protect the interests of future generations. And while it has developed long-term strategies such as the European Green Deal, these do not look beyond 2050. Lawyer and founder of The Good Lobby Alberto Alemanno argues that the EU's position gives it a particular responsibility in this regard, and that the European project, by the nature of its creation, is fundamentally a long-term response to prevent the recurrence of conflict. In addition, argues Alemanno, the EU is uniquely situated to take a long view of political questions in a way that national parliaments cannot and could therefore play a significant role to foster more long-term thinking.

The Good Lobby is among a number of European civil society organisations that united to launch the Future Generations Initiative in February 2024. The initiative identifies a number of existing building blocks in primary EU legislation that could serve as the basis for more formalised protections for future generations. For example, Article 3(3) of the Treaty on European Union (TEU) introduces the concept of solidarity between generations, complemented by the prohibition of discrimination based on age.

In recent years, EU leaders have emphasised the need to strengthen its "culture of preparedness and evidence-based anticipatory policy-making". To this end, Maroš Šefčovič was nominated as the first EU Commissioner in charge of "strategic foresight" in 2019. Since 2021, Šefčovič has also overseen the launch of the EU-wide Foresight Net-

EXPANDING OUR UNDERSTANDING OF THE POLITICAL COMMUNITY – BOTH IN SPACE AND TIME – REMAINS AN ONGOING PROCESS

work and convened meetings of "Ministers for the Future". While promising, these moves have been criticised for their technocratic language and approach and for failing to make the EU's obligations to future generations sufficiently explicit and binding.

Civil society organisations have put forward proposals to tackle these weaknesses. The ZOE Institute for Future-fit Economies calls for a Commissioner or Executive Vice-President for Future Generations, who would be mandated to "enshrine intergenerational thinking horizontally across policy areas".[6] The Future Generations Initiative echoes this and also calls for an "inter-institutional Declaration signed by the three European institutions specifically identifying the rights of Future Generations".

Alberto Alemanno sets out additional recommendations, including a European ombudsperson for future generations, the extension of the temporal dimension of the EU's impact assessments to take future generations into account, and the establishment of a European Parliament intergroup on future generations. Meanwhile, Sophie Howe has suggested capacity-building and support to train civil servants and leaders to make intergenerationally fair decisions and the launch of an ambitious Europe-wide citizen dialogue focusing on the future.

DEMOCRATIC RENEWAL

Expanding our understanding of the political community – both in space and time – and shaping fair modes of representation remains an ongoing process. While this presents democratic dilemmas, it also provides opportunities to reflect on how our political processes and institutions can be strengthened and transformed. Thinkers such as Dominique Bourg and Pierre Rosanvallon have connected efforts to represent future generations with deeper democratic renewal, setting out proposals to revitalise decision-making while adopting a longer-term perspective.

In this process of reflection, we can draw inspiration from around the globe. Indeed, far from being a novel or Western phenomenon, the concept of protecting the future of those yet to be born has long been present in various forms throughout the world and has informed processes of governing and decision-making at different levels. For example, a central principle informing decision-making for the nations of the Haudenosaunee is the Seventh Generation Principle, which holds that the decisions we make today should result in a sustainable world seven generations into the future. A further example is the Future Design movement in Japan, a model of participatory decision-making to overcome short-term thinking, drawing on traditional culture.

For Sophie Howe, governments need to engage citizens in this process of setting a long-term vision. This collective projection into the future, she argues, can also help reconnect citizens to their values, priorities, and hopes by encouraging them to think not only of how the immediate material needs of future generations can be assured, but also about what a life well-lived might mean for them.

6 Dirth, E., Miller, C., Kormann da Silva, N., Danilaviciute, L., Kaufmann, R. (2023). *"An Executive Vice-President for Future Generations"*. ZOE Institute for Future-fit Economies: Brussels.

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THE CASE FOR SUFFICIENCY

AN INTERVIEW WITH
YAMINA SAHEB
BY **MARÍA DIOS**

Moving away from extractivism and overconsumption would drive positive transformation in Europe while addressing global injustice. This could be achieved by implementing sufficiency policies, which aim to reduce demand for energy, materials, land, and water while delivering wellbeing for all within planetary boundaries. An interview with Yamina Saheb, a lead author of the IPCC report on climate change mitigation.

MARÍA DIOS: The first European Climate Risk Assessment, published this year by the European Environment Agency, shows that Europe is unprepared for growing climate risks. For the Intergovernmental Panel on Climate Change (IPCC), climate strategies need to include "transformational adaptation". What does this mean?

YAMINA SAHEB: Transformation is not enough, because it means staying in the same system. What we need is a metamorphosis, which is about radical system change.

Moreover, adaptation is not separate from mitigation, and we should have climate policies that consider both at the same time. The split between the two categories is misleading and wrong, because if we don't drastically reduce emissions, the temperature will go up and we will no longer be able to adapt.

The first step towards climate adaptation is to cut emissions. Policymakers need to realise that having an unambitious climate target and insufficient climate policies means that millions of Europeans will die. This might occur well before the end of the century – sooner than we ever thought. With the current policies, if nothing is done to stop the damage, climate change is going to be the biggest genocide ever committed.

What would this metamorphosis look like?

Metamorphosis means putting sufficiency front and centre. Sufficiency tackles both mitigation and adaptation, because it is about emissions reduction on the one hand, and equity and access to wellbeing on the other. Currently, the first aspect is considered mitigation and the second adaptation. But if global warming continues, governments will not be able to guarantee a good quality of life for everyone. That is why we need to talk about sufficiency and address mitigation and adaptation jointly.

How could the EU move towards sufficiency?

The current EU policies do not include sufficiency, but we cannot decarbonise without embracing it. For example, in the case of residential buildings, it has been calculated that the lack of sufficiency policies over the period 1990-2019 has led to a missed opportunity to decarbonise the sector by around 30 per cent. At the moment the EU's approach is techno-solutionist. But such an approach entails extracting more resources and creating more emissions. Even if these emissions will not happen in Europe, they will take place because of and for the EU. In practice, this means that we are not decarbonising.

Europe's techno-solutionism is most evident in the emphasis on negative emissions through carbon capture and storage (CCS) and natural carbon sinks. However, this is just a big lie, because we cannot count on these solutions on a large scale. Take the reliance on forests, for example. The models we have do not take into account the impact of climate change on these ecosystems. Natural sinks are heavily affected by climate change. There is already a discussion in France about the fact that French forests cannot absorb any more carbon. So instead of talking about "net zero" and "negative emissions", we should be working towards achieving zero emissions. And then, if we are lucky and our forests are still working as sinks, all the better.

Besides, when aiming at zero emissions targets, the EU should also consider its historical responsibility for climate change. What makes climate change is cumulative emissions, not only those of today or of the last century. If we take this into account, acknowledge our responsibility for the climate mess, and consider planetary boundaries, then the EU

as a whole should be carbon neutral by 2033. The emissions we will produce between that year and 2050 should be the right of countries that have less historical responsibility for global warming. By setting 2050 as a target for carbon neutrality, we are effectively colonising the atmosphere. This is what I call the neo-colonialism of the Global North's climate targets.

So when we talk about climate targets, we cannot focus narrowly on Europe or look exclusively at the present, but we must address global extractivism and historical responsibility for climate change. How can sufficiency help?

Sufficiency sets two thresholds. The upper threshold is planetary boundaries. It should help calculate carbon budgets, because sufficiency is about equity. This is where 2033 as the year of Europe's climate neutrality comes from. The lower threshold of sufficiency is wellbeing and human rights for all – not just for white people in rich countries.

When you take these two thresholds into account, it becomes clear that the effort Europe must make is huge. One may ask, is this fair towards our kids or even ourselves, considering that we did not make the decisions that have led to climate-changing emissions? The thing is, we do benefit from all the infrastructure that was built with these emissions. Thanks to this infrastructure, my life is completely different and much easier here in Europe than it would be in North Africa. So, this responsibility is part of our heritage.

How do we address this global responsibility? At the moment, even the European Green Deal is being called into question.

The European Green Deal is not a good deal, even if everyone is happy with it. From a political point of view, it was a good thing to do. But from a climate perspective, it is not ambitious enough. That is why the Green Deal being under threat is a positive thing. It takes time and a lot of money to put climate policies in place. Before mobilising these resources, it is essential that we get the policies right by pursuing sufficiency on all levels.

WHAT WE NEED IS A METAMORPHOSIS, WHICH IS ABOUT RADICAL SYSTEM CHANGE

At the EU level, we should start with the Stability and Growth Pact. If you do not have sufficiency there, you can only have a debate on behaviour change, as happened in France. Second, we should rethink EU monetary policy. These two policy instruments will decide the future of Europe, and Europe has no future without sufficiency.

Today, we can no longer avoid global warming. We are in a situation of damage control for humanity and our ecosystems. It is not just Europe that does not have a future without sufficiency but humanity as a whole. With sufficiency, we will not go back to how things were before because this is no longer possible. But we will halt global warming and avoid being in a more catastrophic situation. At that point, we can adapt.

Why was the sufficiency debate in France reduced to behaviour change? And do you see France's recognition of sufficiency as a positive step forward?

France is the only EU country where sufficiency appears in the law, but it is only mentioned in relation to energy in the Energy Transition Law. What happened is that, with the energy crisis that resulted from the war in Ukraine, the president asked the government to prepare energy sufficiency plans. But France is an EU country, and you cannot implement sufficiency in only one member state without changing EU policies. So the French government ended up preparing behaviour change plans, encouraging people to reduce energy consumption. Energy emissions related to residential buildings went down, and the government celebrated it as a success. Yet that was not sufficiency. It was precariousness or energy poverty; people could not afford to heat their homes.

BY SETTING 2050 AS A TARGET FOR CARBON NEUTRALITY, WE ARE EFFECTIVELY COLONISING THE ATMOSPHERE

The only positive thing that happened in 2022 is that the IPCC report on mitigation was published, and people discovered that sufficiency exists.[1] There are plenty of experts focusing on sufficiency, because everyone who works on climate policies knows that we are going in the wrong direction. The Franco-German Forum for the Future, for example, is discussing energy efficiency and sufficiency. There is also a group of NGOs in Brussels discussing sufficiency – something that would have been unimaginable only five years ago. We received more questions and requests on sufficiency than we could address, so we established the World Sufficiency Lab to build a sufficiency community. We will have an EU hub and, most likely, national hubs in France and Germany – the two countries where there is an ongoing discussion on sufficiency.

Beyond Europe, are there any countries or regions that can serve as positive examples of implementing sufficiency principles in their approaches to climate adaptation or resource management?

The only country where sufficiency principles have been embedded in all policies is Thailand. But there is no economic evaluation of what impact this is having. And Thailand is not part of the Organisation for Economic Co-operation and Development (OECD). Plus, Thailand is not a democracy, and many European colleagues are very critical of this. It is true that you cannot really compare Thailand to Europe, but I think that even non-democratic regimes can have some good ideas.

For example, Thailand introduced sufficiency in its education programme. My generation there learned about sufficiency at school, which was not the case in France. We need to shift our mindsets, and school is good for that.

1 Intergovernmental Panel on Climate Change (2020). *Climate Change 2022: Mitigation of Climate Change. Summary for Policymakers*. Available at <https://bit.ly/3wF1YPJ>.

How does sufficiency interact with economic growth? And is it compatible with capitalism?

Capitalism and the current economic paradigm are not compatible with life on this planet. So the question is, do we want to have life or do we want to have capitalism?

In terms of growth, we do not know the economic impact sufficiency will have if it is embraced at an EU level because the EU Commission has not produced scenarios that include sufficiency policies. But we do have data for France, where sufficiency has been assessed from a macroeconomic perspective. The findings show that if sufficiency is implemented drastically, GDP would fall by 0.2 per cent by 2050 compared to the reference scenario. If it is implemented gradually, France's GDP would be 2.4 per cent higher than in the reference scenario.[2] It is likely that we would end up with similar results for the EU.

2 Agence de la transition écologique (ADEME) (2022). *TRANSITION(S) 2050. Feuilleton: Les effets macroéconomiques*. Available at <https://bit.ly/4bAG3bh>.

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A POLITICS OF NO REGRETS?

THE RISKS OF CLIMATE SECURITISATION

ARTICLE BY
ANDREW TELFORD

Climate adaptation is sometimes presented as a "no regrets" policy response broadly supported by citizens and policymakers. But what are the risks of a militarised climate adaptation policy in the context of weaponised narratives about "climate-induced migration" and "climate conflicts"?

European countries, faced with deep social inequalities and the accelerating impacts of climate breakdown, must mitigate and adapt to climate change in an urgent, transformative manner. Whereas ambitious mitigation responses directly challenge fossil fuel extractivism and are subsequently subject to a "backlash" in Europe and elsewhere, adaptation policies focus on learning to live with the impacts of climate change. As noted in the European Union's 2021 Climate Adaptation Strategy,[1] adaptation "solutions" present "no regrets" that are "worth pursuing regardless of the ultimate climate path".

However, the politics of climate adaptation is more complex than this picture suggests, and interwoven with unequal relationships of power, insecurity, and injustice. Which knowledges, including those of indigenous peoples, are prioritised in European adaptation responses? Who bears responsibility for funding adaptation responses, and how do these responsibilities map onto the unequal distribution of historic and current greenhouse gas emissions? And what say do those most affected by climate breakdown have in adaptation policy and decision-making?

1 European Commission (2021). "Forging a climate-resilient Europe - the new EU Strategy on Adaptation to Climate Change". *European Commission Communication COM/2021/82*. Brussels. Available at <https://bit.ly/44O93dl>.

Debates on climate adaptation and security are often concerned with the security implications of climate impacts, for example the risks of rising sea levels for territorial integrity or extreme weather events for key infrastructure.

In principle, adaptation policies can provide a means to mitigate for climate security risks such as the impact of flooding on transport infrastructure. However, it is often not clear who or what the "referent" vulnerable to climate change is. Depending on the context, it could be a nation-state or territory, key infrastructure, a population of living (including human) beings, the planet and particular ecosystems, or other potential security referents.

Given the need to adapt to climate change at all geographical scales and respond to locally differentiated climate impacts, state-centric and Eurocentric security responses threaten the possibility of just and transformative adaptation. Indeed, where such climate adaptation responses lead to increased militarisation and border policing, especially in response to weaponised narratives about "climate conflict" and "climate-induced migration", this will only compound the violence engendered by climate change.

MIGRATION AS CLIMATE ADAPTATION?

The implications of climate change on human mobility form a key climate security discussion point. Several discourses have emerged in a European context to describe migration linked to climate change.[2] One focuses on the human security risks and vulnerabilities of people displaced by climate-related factors. The term "climate refugees" is often seen in this context. Another emphasises climate-induced migrants as a security risk to states, highlighting how displaced individuals could be a risk for receiving European countries.

Migration has also been framed as a form of adaptation to climate change.[3] Here, migration is presented as a regular human activity carried out for many reasons, including climate risk response. Individuals adapt to climate change by exercising their agency to move in response to a changing situation.

The migration-as-adaptation discourse has been critiqued for its neoliberal orientation: it can sometimes emphasise "individual choice", especially when migration is framed as exploiting economic opportunities in an international marketplace. Whilst this discourse includes a different conception of human agency, it does not necessarily question

2 Deniz Butros, Veronica Brodén Gyberg & Anna Kaijser (2021). "Solidarity Versus Security: Exploring Perspectives on Climate Induced Migration in UN and EU Policy". *Environmental Communication*, Volume 15, Issue 6, pp. 842-856. Available at <https://rb.gy/sc8e5r>.

3 Richard Black, Stephen R. G. Bennett, Sandy M. Thomas & John R. Beddington (2011). "Migration as adaptation". *Nature*, 478, pp. 447–449. Available at <https://www.nature.com/articles/478477a>.

CONSTRUCTING A NARRATIVE THAT "CLIMATE REFUGEES" ARE DISPLACED BY "CLIMATE CONFLICTS" IN THE GLOBAL SOUTH REPRODUCES COLONIAL TROPES

the structures of global capitalism that underpin climate breakdown, let alone the responsibilities of states to provide security for communities impacted by climate change.

MILITARISED RESPONSE

These discourses are not mutually exclusive and transpire in multiple forms across the spectrum of political actors in Europe. The European far right has been conventionally sceptical about the existence of climate breakdown, denying the fact that the Earth is warming, negating the link to anthropogenic activities, or refuting the necessity of policies to respond to the problem. Mitigation policies have been derided as too expensive, imposed by "external, global elites", and unjust and economically detrimental for working-class communities. Climate change, a fundamentally transnational phenomenon demanding international solidarity, threatens nationalisms that prioritise the interests of a strongly bordered nation-state.

A narrative of climate-induced migrants from Global South countries "threatening" the borders of Europe is compatible with a far-right ideological agenda. Exploring documents produced by 22 European far-right parties, Joe Turner and Dan Bailey identify a discursive shift towards what they call "ecobordering".[4] European far-right parties are casting migrants as both "environmental vandals" who harm the environment in their host countries and "plunderers" who deplete resources in their "home" countries, situating the causes of environmental degradation in overexploitation in the Global South. Their racialised narrative provides justification for strong border controls. It also obscures the responsibility of the polluting, industrial Global North and the capitalist world economy as structural causes of climate breakdown.

4 Joe Turner & Dan Bailey (2021). "'Ecobordering': casting immigration control as environmental protection". *Environmental Politics*, 31, Issue 1, pp. 110-131. Available at <https://rb.gy/1u8skn>.

The intimate attachment of far-right, neo-fascist actors to fossil capital and extractivism does not contradict the claim that climate-induced migration could be co-opted into a nationalist, racist anti-migration politics. Importantly, such a move does not require that far-right parties accept an anthropogenic cause for climate breakdown; when considered as a type of adaptive response, these political actors only need to accept that the climate is changing and that this has implications for human mobility.

This exclusionary agenda can also be situated as part of "Fortress Europe", embodied in the EU's violent, militarised border apparatus. The EU's border management has "stretched" over the last two decades into Africa, including multiple migration partnership deals with third countries, including Tunisia, Mauritania, and Morocco. Jürgen Scheffran and colleagues have highlighted how development programmes in Africa can be used to promote an "adaptation-to-prevent-migration" pathway.[5] Here, climate adaptation strategies become a form of immigration control, a way to contain migration rather than migration conceived as a type of positive adaptive response.

Media headlines such as "The climate refugee crisis is landing on Europe's shores"[6] and "We need to prepare for mass climate migration"[7] construct an image of large numbers of climate-induced migrants arriving in Europe from a Global South plagued by resource scarcities, disasters, and conflict. Many estimates have been provided for these types of claims, from biologist Norman Myers' strongly criticised[8] claim that there would be 200 million climate refugees by 2050, to the 2007 Christian Aid report "Human tide: the real migration crisis", which claimed that 1 billion people could be internally displaced by 2050.[9]

In their analysis of how the MENA (Middle East and North Africa) region is represented in NGO reports, media, and web publications on climate change and security, Chris Methmann and Delf Rothe show that the region is conceived as a space of transnational security risks.[10] Individuals represented in images in these documents are largely people of colour and women and children represented in passive and domestic roles. "Climate refugees" are mainly represented as simultaneously risky and at risk: vulnerable and forced to move on the one hand, and, in some cases, capable of causing social destabilisation in receiving countries on the other.

5 Jürgen Scheffran, Elina Marmer, Papa Sow (2012). "Migration as a contribution to resilience and innovation in climate adaptation: Social networks and co-development in Northwest Africa". *Applied Geography*, 33, pp. 119-127. Available at <https://rb.gy/1u8skn>.
6 Ibrahim Özdemir (2023). "The climate refugee crisis is landing on Europe's shores — and we are far from ready". *Politico*. 20 February 2023. Available at <https://rb.gy/dguvbx>.
7 Philippa Nuttall (2023). "We need to prepare for mass climate migration". *Prospect*. 4 September 2023. Available at <https://rb.gy/ikejl4>.
8 See for example: Oli Brown (2008). "The numbers game". *Forged Migration Review*. Issue 31 (October 2008), pp. 8-9. Available at <https://www.fmreview.org/climatechange/brown>.
9 Christian Aid (2007). *Human tide: the real migration crisis: A Christian Aid report.* May 2007. Available at <https://rb.gy/oki7g0>.
10 Chris Methmann, Delf Rothe (2014). "Tracing the spectre that haunts Europe: the visual construction of climate-induced migration in the MENA region". *Critical Studies on Security*, 2, Issue 2, pp. 162-179. Available at <https://rb.gy/3z6xty>.

Constructing a narrative that "climate refugees" are displaced by "climate conflicts" in the Global South reproduces neo-Malthusian, racialised, and colonial tropes about "climate terror" reaching the borders of Europe. Such discourses perpetuate an alarmist, inaccurate picture of climate-induced migration when in fact a large academic literature indicates that much environmental displacement is internal and multi-causal and that it is difficult to attribute climate change as a causal influence on human mobility.[11] This depiction is also susceptible to political appropriation by European states hostile to a more humane and just migration policy.

"CLIMATE CONFLICT"

Much academic and policy literature has developed that explores the potential for "climate conflicts" in the context of climate breakdown.[12] Several cases have been put forward for conflicts already linked to anthropogenic climate change, including violent insecurity in the Lake Chad Basin and, most notably, the Syrian conflict.

The Syrian conflict broke out in early 2011 following the Assad government's repression of pro-democracy protests linked to the Arab Spring. Several studies[13] claim that a drought in the north and northeast of Syria from 2006-2010, itself made more likely by climate change, contributed to food and livelihood insecurities in the country, which led to rural-urban migration to cities such as Damascus and Homs in western Syria. This migration is argued to have contributed to the broader social unrest that led to the demonstrations in early 2011.

11 Ingrid Boas, Carol Farbotko, and others (2019). "Climate migration myths". *Nature Climate Change*, 9, pp. 901-903. Available at <https://www.nature.com/articles/s41558-019-0633-3>.
12 See for example: Katharine J. Mach, W. Neil Adger, and others (2020). "Directions for Research on Climate and Conflict". *Earth's Future*, *Volume 8*, *Issue7*. Available at <https://rb.gy/7vqmdl>.
13 See for example: Peter H. Gleick (2014). "Water, Drought, Climate Change, and Conflict in Syria". *American Meteorological Society*, 6, Issue 3, pp 331-340. Available at <https://www.jstor.org/stable/24907379>.

THERE IS A RISK THAT SECURITISED CLIMATE CHANGE DISCOURSE PROMPTS EUROPEAN AND OTHER COUNTRIES TO ACT IN INCREASINGLY MILITARISED WAYS

This narrative has been heavily critiqued, with academic studies also pointing to the impact of other factors such as the liberalisation of fuel prices and mismanagement of groundwater resources on rural Syrian livelihoods.[14] In general, academic literature on climate conflicts remains cautious, with doubts regarding the extent to which climate-related factors influence the causal dynamics behind conflicts.[15]

Notwithstanding this note of caution, there is a risk that securitised climate change discourse prompts European and other countries to act in increasingly militarised ways to adapt to a world of supposed "climate conflicts". Many militaries have adopted the language of climate security, reflected both in the growth of national defence strategies with discussions of climate risk and climate adaptation plans produced by militaries concerned about the impacts of climate breakdown on their operations and assets.

European governments increasing their military investment, armaments, and defence capabilities in response to Russia's full-scale invasion of Ukraine is a significant context for this militarisation of climate adaptation. Olaf Scholz's *Zeitenwende* ("epochal shift") involves Germany meeting the NATO target of defence spending at 2 per cent of GDP for the first time since 1990. The European Union has also broken with historical precedent by agreeing to the disbursement of 11.1 billion euros for Ukrainian armed forces, including providing weapons under the European Peace Facility.

This militarising trend is also echoed in some of Europe's leading Green parties, which were often founded as part of pacifist movements and with shared commitments to human rights. Germany's governing Bündnis 90/Die Grünen has supported sending sending weapons to Ukraine, Groenlinks-PVDA in the Netherlands supports meeting the

14 Jan Selby, Omar S. Dahi, Christiane Fröhlich, Mike Hulme (2017). "Climate change and the Syrian civil war revisited". *Political Geography*, 60, pp 232-244. Available at <https://rb.gy/g94np3>.
15 Tobias Ide (2018). "Climate war in the Middle East? Drought, the Syrian Civil War and the state of climate-conflict research". *Current Climate Change Reports*, 4, pp 347–354. Available at <https://rb.gy/6tnbwl>.

2 per cent of GDP NATO target, and the Green Party in England has also supported the armament of Ukraine's defence forces.

With Europe facing Russia's threat and the prospect of a retraction in US support for NATO if Donald Trump wins a second presidential term, this trend towards increased defence expenditure and militarisation shows no signs of abating. Militaries are already amongst the highest greenhouse gas emitters in the world, with an ecological footprint that stretches across the whole domain of military operations and logistics.[16]

Once supplemented by the alarmist discourse of climate-induced violent conflicts, this creates a real risk that militarisation becomes established as a form of climate adaptation. The militarisation of climate adaptation would likely increase not only the ecological devastation of military activities even further, but also the risk of armed violence in response to so-called "climate conflicts".

RESISTING MILITARISED ADAPTATION?

The effects of militarised violence are very apparent in today's world, from the Israeli government's atrocities in Gaza to the horrors of Russia's invasion of Ukraine. In their report on the potential of a feminist foreign policy for the EU, Nina Bernarding and Kristina Lunz identify climate change as a "threat multiplier", which exacerbates security threats to "humans, societies, and states".[17] If increasingly militarised, there is a risk that climate adaptation policies become a "threat multiplier" in Europe and embolden the "Fortress Europe" border regime.

If European climate adaptation policies are to avoid these risks of militarisation, activists, politicians, and policymakers must reject a secu-

16 Jan Selby, Omar S. Dahi, Christiane Fröhlich, Mike Hulme (2017). "Climate change and the Syrian civil war revisited". *Political Geography*, 60, pp 232-244. Available at <https://rb.gy/g94np3>.
17 Mohammad Ali Rajaeifar, Oliver Belcher, and others (2022). "Decarbonize the military — mandate emissions reporting". *Nature*. 2 November 2022. Available at <https://www.nature.com/articles/d41586-022-03444-7>.

ritised narrative of climate-induced migration and "climate conflict" as a threat to Europe's borders. Instead, adaptation policies should be grounded in principles of intersectional climate justice and the protection of human rights in a climate-changed world.

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THE CLIMATE MOVEMENT'S FIGHT FOR ADAPTATION

ARTICLE BY
STELLA LEVANTESI

The climate movement has traditionally seen adaptation as the fig leaf of climate inaction. But local communities, civil society, and activist groups around the world are now pressuring governments to include adaptation alongside mitigation measures. Is this shift a positive step in the fight for climate justice?

Legal efforts to ensure states adopt environmental and climate adaptation measures are increasing globally. Victims of recurring landslides in Uganda, for instance, have challenged the government's lack of climate adaptation strategies, while the Supreme Court of Pakistan has upheld a decision barring the construction of cement plants in environmentally vulnerable areas. It's part of what Fizza Zaidi, Research Associate for the Climate Change Programme at the Centre for Science and Environment (CSE) in New Delhi, calls a growing "push for adaptation within climate litigation".

In another case in Pakistan, in which a farmer sued the government for failing to abide by its own climate change policies, the Court highlighted the country's vulnerability to extreme weather events in particular. "Recognising the limited capacity of developing countries to adapt, the court saw climate justice as a means through which courts can help build adaptive capacity and climate resilience," explains Zaidi.

Calls for adaptation aren't only happening within courts. Recent COP climate conferences have been crucial forums in which civil society organisations, communities, and activists have voiced urgent demands for adaptation implementation and loss and damage funds.

More locally specific efforts are also emerging. "There are many grassroots initiatives all over the world working on adaptation all the time," underlines Laura Kuhl, Assistant Professor of Public Policy and Urban Affairs and International Affairs at Northeastern University in the United States. "These integrate indigenous voices and movements and integrate climate with other activist movements." Such initiatives contain "a greater understanding of how climate justice is not just about mitigation, but is also about adaptation", she adds. Generally, while mitigation is about reducing planet-heating emissions, adaptation relates to the response to the climate crisis and its impacts.

ADAPTATION IS CLIMATE JUSTICE

Be it through litigation, activism, or civil society efforts, most experts agree that adaptation fits under the broad umbrella of climate justice. "The climate movement went from a very mitigation-focused understanding of the problem to a much more intersectional understanding," Kuhl highlights. But, she adds, adaptation efforts "don't necessarily always get the international attention that other climate actions do".

Compared with global campaigns for climate mitigation, for example, adaptation initiatives are mostly local and have had less international support. If there's one thing that makes adaptation efforts different from mitigation action, it's that it is "heavily context specific", says Tamanna Sengupta, Climate Change Programme Officer for CSE. All around the world, climate activists and advocates have been protesting locally to fight the worsening effects of climate change and the construction of infrastructure that depletes the environment and causes social harm.

"We work on adaptation at a local level. Our fights are mostly focused on soil erosion, concreting of the territory, drought, and other climate issues, which are widespread throughout the country," says Emanuele Genovese, a Rome-based climate activist with Fridays for Future Italy. As weather events become more extreme and visible, the movement's actions focus more on adaptation. Examples include supporting local communities in the aftermath of extreme flooding in the regions of Emilia Romagna and Tuscany in 202 and pushing for legislation focusing on soil erosion issues.

Sometimes socio-environmental fights can turn into violent clashes with the police. In Sainte-Soline, a town in a rural area of western France, protesters demonstrated against a large water reservoir for farm irrigation in March 2023. They alleged that this "mega-basin" benefits larger industries while harming small farmers and the environment. The riots left 200 protestors injured, two in a coma, and more than 25 police officers hurt. Les Soulèvements de la Terre, a group of environmental activist associations in France who took part in the protests, was dissolved in June, with "the government denouncing the 'use of violence' by its members", according to *Le Monde*.[1] In August, a French court temporarily suspended the dissolution of the group. A decision is still pending.

BE IT THROUGH LITIGATION, ACTIVISM, OR CIVIL SOCIETY EFFORTS, MOST EXPERTS AGREE THAT ADAPTATION FITS UNDER THE BROAD UMBRELLA OF CLIMATE JUSTICE

Because adaptation depends on social, environmental, and political contexts, experts also agree that no one solution fits all. Some measures, however, have been working better than others. According to Sengupta, early warning systems, which help communities prepare for and react to climate-related events, are a specific but effective adaptation strategy. The UN has introduced these systems in vulnerable areas in Africa, Asia, and the Pacific to allow a rapid response to extreme weather events.

"Many civil society groups and other non-profit organisations have been advocating for early warning systems especially in developing nations," Sengupta explains. "More than a hundred countries right now have these systems in place. In Mozambique, when Cyclone Freddy hit [in February 2023], the World Bank reported that having an early warning system ensured villagers had time to rehabilitate, and it avoided a lot of deaths compared to earlier floods that occurred in that region."

Adaptation strategies like this one can be tailored to specific climate vulnerabilities, but they should also encompass wider objectives and address urgent socio-economic issues. According to Kuhl, the most effective strategy for managing climate impacts is broader resilience. "The ability to have that underlying capacity to cope with shocks and stresses is really important, and that's not necessarily climate specific," she says "Addressing poverty is probably one of the most effective adaptation strategies. That's a completely different kind of adaptation strategy than something like building a sea wall, for example."

1 "French court temporarily suspends dissolution of climate activist group Soulèvements de la Terre". *Le Monde*. 11 August 2023. Available at <https://bit.ly/3QGeGEx>.

"THE MOST VULNERABLE, WHO ARE IMPACTED THE MOST BY CLIMATE CHANGE, ALSO HAVE THE FEWEST RESOURCES TO ADAPT"

DUAL APPROACH

Neither mitigation nor adaptation alone will be sufficient to combat the challenges posed by climate chaos and the destruction of ecosystems. "There are going to be impacts from climate change that we can't mitigate and we can't adapt to, and there will be losses and damages. This really raises the questions of where is that money going to come from, and who should it come from, and how do we get it where it needs to go," Kuhl says.

Climate advocates and experts are convinced climate action must include both adaptation and mitigation measures. This means recognising the challenges of both and promoting action to address them. In particular, most countries rely on external funding and resources for adaptation needs. "Adaptation needs for the Global South are synonymous with financial and technological aid," states Sengupta. "Without that, it's very difficult to really implement effective strategies. There's a need for scaled-up public finance and development assistance but then there needs to be a political will to mobilise that."

The financial costs of adaptation are very high, and global spending on climate investments is mostly going towards mitigation. There's also an increasing acknowledgment that climate change is a threat multiplier – that it layers and overlaps with pre-existing socio-economic, gender, or health vulnerabilities. "The most vulnerable, who are impacted the most by climate change, also have the fewest resources to adapt," Kuhl says. "There's a moral and ethical responsibility that there be a channelling of resources to the local level, to the people who are most vulnerable, ideally to meet their priorities."

This is why many climate activists are pushing governments to uphold the responsibility of addressing these needs, with particular emphasis on redirecting climate funds to the Global South, which is especially vulnerable to the harmful effects of climate change. During COP28 in November 2023, the first Loss and Damage Fund to provide monetary aid to developing countries was set up. Countries including Germany, the UK, and Japan, as well as the EU, made funding pledges for 700 million dollars. However, critics argued that this amount fell short of the 400 billion dollars in losses developing countries face each year. Developing countries also expressed doubts regarding the long-term financing of the fund as well as the World Bank's role as interim trustee.

Similar issues have emerged in other cases of adaptation funding. In 2022, Pakistan experienced heavy flooding that killed thousands of people and left many more homeless. Today, there is increasing evidence that events like the Pakistan floods are directly tied to the climate crisis. In fact, climate change could have increased intense rainfall in Pakistan by about 50 per cent according to a study by scientists working in the emerging field of attribution science, which helps researchers identify links between extreme weather events and global warming.

"About 10 billion US dollars was pledged to help Pakistan rebuild," says Sengupta. "But looking into the fine print of that, more than 90 per cent of this was provided as loans and not as real assistance. When we speak about adaptation finance, we need to acknowledge [that] there is a huge disparity in the way that adaptation fund[ing] comes in."

WEAPONISING OR OBSTRUCTING ADAPTATION?

More challenges come with adaptation narratives in public debate. Climate deniers have used adaptation as a smokescreen to avoid, and to shift, responsibility for the climate crisis, arguing that although climate change is an issue, humans' capacity to adapt means it need not be considered a critical problem. According to a recent study on strategies to delay climate action, this argument implies that working to mitigate and avoid climate change is futile, and that adaptation is "the only possible response" to the crisis.

In May 2022, at a *Financial Times* conference, Stuart Kirk, then head of responsible investing for HSBC's asset management division, said, "Who cares if Miami is six metres underwater in 100 years? Amsterdam has been six meters underwater for ages, and that's a really nice place. We will cope with it." Kirk was later suspended for his comments. In an article about Alex Epstein's book *Fossil Future*, which advocates for fossil fuels, Nitish Pahwa writes: "The new style of climate denial is here: It's not that carbon emissions aren't increasing, or aren't warming the world, but look, you're doing fine right now, right? So, we'll be just fine!"[2]

According to Kuhl, however, this instrumentalisation of adaptation discourse by climate change deniers and delayers was also possible because for a long time, adaptation was "viewed as a taboo topic". "Even in the literature it's often described as 'the ugly stepchild of mitigation', and one of the reasons for that was always this fear that if we talk about adaptation, it implies that we're giving up on mitigation and that it would distract from action. This rhetoric was also embedded within the IPCC process for a long time."

Beyond the risk of pushing adaptation as a way to shift attention away from both mitigation efforts and corporate responsibility for the climate crisis, and what Kuhl defines as the "adaptation-mitigation tension", it's interesting to note how adaptation itself is, in some cases, being obstructed by vested interests.

"There's a lot more obstruction of adaptation happening than has been acknowledged," says Kuhl. "Addressing climate impacts is going to change vulnerabilities. It's going to shift who's most vulnerable, and that has direct impacts on power dynamics. So just logically, there are vested interests in maintaining those power dynamics." Wealthy real estate groups in California, for example, are resisting coastal flood protections, such as planned relocation and managed retreat, out of fears that they will decrease property value and, in turn, threaten business, development opportunities, and tourism.

In other cases, resistance to adaptation measures stems from decades-long fights against business developments that disrupt the environment. Indigenous populations have been fighting the Arizona Snowbowl ski resort in the United States since the 1930s because its presence has disrupted their spiritual connection to the land and the mountain's environment. In 2022, a proposed expansion of the ski resort's facilities and snowmaking operations, aimed at adapting to climate change-induced snowfall alterations, has caused new tensions. The resort manufactures its artificial snow with reclaimed water from the local sewage system, but a coalition of tribes has said that sacred ground is being contaminated.

Kuhl says that it's important to distinguish between "obstruction" and "resistance", and explains that obstruction happens when powerful interests aim to maintain the status quo by blocking adaptation. Resistance, on the other hand, happens when marginalised groups see certain adaptation strategies as posing greater harm. While adaptation still presents many challenges, there is an increasing recognition that climate action today means pushing for adaptation in an integrated approach with mitigation objectives, with the final goal being climate accountability and climate justice.

2 Nitish Pahwa (2022). "This New Style of Climate Denial Will Make You Wish the Bad Old Days Were Back". *Slate*. 31 May 2022. Available at <https://bit.ly/3QFbNUF>.

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REWILDING ATTENTION

REDUCING OUR NEED FOR CONSTANT ENTERTAINMENT

ARTICLE BY
CHRIS SAKELLARIDIS

The rapid growth of the global entertainment industry is harming not only individual wellbeing but also planetary health. Can humans forgo the instant satisfaction of online games in favour of a deeper appreciation of natural time and embodied experience?

The gaming and toy industries have been steadily growing since the Covid-19 pandemic. Projected revenues for 2024 are set at 416.2 billion euros for the former and 118 billion euros for the latter, an annual increase of 8 per cent and 2.5 per cent respectively. They're not the only industries to have seen major gains: the global casino, sports betting, and gambling industry reached a value of 472 billion euros in 2023, due in large part to the growing popularity of online gambling. The revenues of the global entertainment and media industry, which includes all types of TV and radio broadcasting as well as publishing, are also continuing to reach trillions of dollars, despite a recent slowdown. This growth is a general trend seen across all continents.

Driven in part by the need for distraction and activity during lockdown – for adults and children alike – online and digital games, as well as various forms of media and betting, have replaced more direct and physical types of sociality. The effects of this change seem to be twofold: on the one hand, this online and digital transformation enables a more globalised way of forming community and fostering exchange; on the other, it carries with it an increased risk of isolation, excessive screen time, and lasting cognitive changes, especially for the young. A third aspect is the environmental impact of this digital transition, which requires heavy use of natural resources. Moreover, the potential political and social implications of a society addicted to spectacles and distractions are many.

NOT ALL FUN AND GAMES

The environmental cost and exploitative labour practices of the toy industry are now common knowledge. Investigations into China's toy factories have uncovered a reality of meagre wages, overwork, and sexual harassment. In the city of Yiwu, where more than half of the world's Christmas decorations and accessories are manufactured, workers are routinely exposed to toxic chemicals including lead paint.

German photographer Michael Wolf's portraits of workers inside China's toy factories in 2004 gave a startling visual illustration of daily life there. Many were rural migrants who spent their days twisting legs, arms, and heads replete with soft cheeks, batting eyelashes, and infant half-smiles onto the torsos of dolls. The project, entitled "The Real Toy Story", also involved a series of exhibitions across the world where Wolf and his colleagues glued together thousands of plastic toys bought in the US, as well as showcasing images from the factories. According to China Labor Watch, many of these workers still face horrendous working conditions.

Global toy manufacturers, such as the American Barbie doll maker Mattel and the German Ravensburger, have begun to take these issues into account, not least because of the public outcry sparked by these investigations. They have attempted to lessen their reliance on China by moving production to countries like India, Mexico, Vietnam, and Malaysia. These changes, however, also seem to be based on economic, rather than solely moral, imperatives: China's labour costs are soaring, and there are, of course, no guarantees that working conditions are going to be better in other countries.

The EU has meanwhile taken steps to address toy safety by banning the use of harmful chemicals in toys sold within the bloc. Similar regulation also exists in the UK and other non-EU countries, including the US and Canada. However, compliance with these regulations is patchy, with substandard toys fabricated outside of Europe still flooding the EU market. In 2023, national enforcement authorities involved in a project supervised by the European Chemicals Agency found that, of roughly 2400 consumer products analysed, toys were only second second only to electronic products in terms of non-compliance with EU laws.

Aside from the toxic chemicals, the toy industry's reliance on global trade and shipping networks compounds its environmental impact. An accident in 1992, in which a cargo ship caught in a storm in the North Pacific dumped thousands of rubber ducks into the sea, was a surreal moment when yet more unnecessary plastic pollution entered the ocean. Some of these ducks floated around the world for years, washing up a decade and a half later on beaches as far away as the UK, Alaska, and Australia.

THE ENVIRONMENTAL COST AND EXPLOITATIVE LABOUR PRACTICES OF THE TOY INDUSTRY ARE NOW COMMON KNOWLEDGE

PLAYERS OF ALL KINDS

However, toys are no longer the principal plaything of children and young people. The colossal annual revenues for the gaming industry reflect its global popularity. More than two billion people are estimated to be involved in some kind of gaming globally, whether on computers, consoles, or mobile phones. While some consider that video games and the general switch towards digital media could reduce the environmental impact of the entertainment industry – as well as stimulate responses to the climate crisis through games that, for instance, call on players to regenerate drought-stricken landscapes – there are still very big elephants in the virtual room: the human and environmental cost of mining for electronics materials, and the 50 tonnes of electronic waste ending up in landfills around the world every year.

The use of energy for servers and data centres, as well as gaming devices at home, is another critical problem. Although some platforms now offer users the possibility to play online without requiring major hardware, thereby reducing electronic waste, the material impact of energy consumption related to gaming remains. The colossal energy usage of generative AI is also something the gaming industry – and all industries using it – will need to address head-on. And just like toys, gaming is no stranger to unacceptable labour practices, with a 2022 survey by UNI Global Union of workers across 29 countries revealing low pay, mandatory overtime, and discrimination as key issues.

Theme and amusement parks are another necessary focus of attention. The precise human impact and environmental footprint of these land and water-hungry parks is still unclear, but they do feed directly off unsustainable mass tourism. The parks themselves seem to be separate worlds, completely alien to the landscape and communities around them. They, too, are fraught with issues related to testing working conditions and exploitative labour practices: an investigation by *Equal Times* in 2018, for instance, showed workers at Disneyland in the US earning far less than an MIT research institute's estimation of the minimum hourly living wage.

Lastly, the massive rise in online gambling, facilitated in part by the increasing use of mobile phones, must also be put under the spotlight for its public health impact. In fact, the EU Commission has been seeking to create a regulatory framework for online gambling. This is rife with complications, however, not least because state-sponsored gambling – national lotteries, sports-related betting – also brings significant revenue into the public coffers. Yet the negative social impact of gambling is noteworthy: in the UK and Ireland, two of Europe's most liberal countries in terms of betting and gambling, research by University College Dublin has highlighted its contribution to isolation, relationship breakdowns, and emotional crises. In the UK, the industry regulator found that 43 per cent of people who use betting terminals in pubs are either problem or at-risk gamblers.

BREAD AND CIRCUSES

These industries service our need for amusement, stimulation, and distraction. Late-stage capitalism is reliant on perpetual entertainment loops, on the overproduction of media and other products, and on advertising and marketing practices that act as "attention worms", infiltrating the mind and staying there. We expect and desire ever-higher levels of entertainment, just as we do travel and tourism. The construction of artificial consumer needs is an omnipresent social feature, and industries related to entertainment and amusement play a significant cultural role in this.

French philosopher Guy Debord captured the connection between capitalist production and consumption of entertainment. According to Debord, the consumption of "spectacle" in the form of information, propaganda, advertisement, or entertainment is the "model of socially dominant life". Quite different from the bread and circuses of the past, the ruling processes of today operate in a social landscape characterised by extreme individualism. The coliseum and the hippodrome have converged right in front of our eyes: representation, stimulation, and

THE COLISEUM AND THE HIPPODROME HAVE CONVERGED RIGHT IN FRONT OF OUR EYES

hyper-reality exist with us – we carry them all the time. Our mental experience is constantly and regularly shaped by this. Through our own content consumption and creation, we are simultaneously spectators and the spectacle itself.

The psychological and cognitive effects of this are potentially immense. Research into distraction and the use of technology is still quite limited, although studies by, for instance, the Center for Humane Technology suggest a link between over-stimulation and increased stress levels, anxiety, and addiction. Much like addiction, our brains become used to a particular outcome that makes us feel better for a short amount of time. When the object or behaviour is removed, we begin to crave it, and a vicious cycle of distraction and satisfaction ensues. And, like all addictive behaviours, feeling satiated becomes a never-ending quest, with dangerous and unhealthy consequences.

A NEW NARRATIVE

What kind of adaptation might be required to tackle this aspect of modern life? How might we think of transforming our relationship to entertainment – to the games we play, the amounts of visual media we watch, and the toys we buy?

Foregrounding ethics of reuse, restoration, degrowth, the wellbeing economy, sustainability, and rewilding might be a start. Green politicians, policymakers, and activists must start addressing these issues and offering a counter-narrative to the dominant growth-driven, exploitative, and extractivist approaches that make entertainment a continuous and easy source of profit. Some ideas could be found in more traditional kinds of sociality, as well as experiential, outdoor games and forms of entertainment that utilise and habitually develop imaginative play. Materiality and embodied experience must be at the forefront of these attempts, including becoming more comfortable with the absence of constant stimuli.

CREATIVITY AND INGENUITY ARE FUNDAMENTAL ELEMENTS OF THE ADAPTATION WE MUST UNDERTAKE

It is also possible to consider a range of policy proposals aimed at transforming and reducing the impact of the way we entertain ourselves. Corporations that profit from these activities should take responsibility for their impact and ensure their supply chains meet high labour and environmental standards. Community-centred approaches, such as so-called "libraries of things", where people can share tools, equipment, and other objects, could play a key role at the local level. At the European and national level, environmental levies on toy imports and stringent adherence to regulations around, for instance, labour conditions, must be effectively monitored. Incentives such as tax breaks and subsidies for companies that invest in research and development on sustainable materials in toys and innovative games would be a good idea. Government funding should be redirected towards restorative, low-tech leisure activities.

The gaming industry must also start picking up the bill. One small but potentially effective measure would be to add a fee – a kind of Robin Hood Tax to be paid by telecommunications and electronics companies on downloads of games apps. Electronics and hardware companies must also be held responsible for clearing up their own waste, much like plastics companies should.

For gambling, casinos, and theme parks, the approach could be much more radical. The gradual phase-out of theme parks is something that must be considered, in the same way as zoos. These spaces are remnants of a bygone era, a late-19th-century feast of industrial-scale land and water use, overconsumption, and mass entertainment. Although this is not easy, we have seen similar major changes take place: it was not so long ago that the exploitation of animals in circuses was taken for granted; now it is outlawed in many countries. And even though laws around betting and gambling are complicated in part by states' involvement in the industry, online gambling companies and casinos must be approached in the same way as the tobacco or alcohol industries.

While outright bans on gambling and theme parks might be considered illiberal and possibly counterproductive, harmful activities should be made more and more unprofitable. If we can argue for divestment from fossil fuels, we can do the same for other major economic activities with a huge negative social and environmental impact. Individual consumption choices have a role to play, though we should avoid focusing on individual responsibility. The changes that are required are systemic and socio-cultural in nature, much like the changes in agriculture, transport, energy, diet, and general patterns of consumption.

Creativity and ingenuity are fundamental elements of the adaptation we must undertake to ensure we balance our need for play with the duty of care we have towards the environment. Rewilding our own attention and mental horizons would mean allowing for spaces uninhabited by constant content and for thinking processes that take place in natural time, with delayed satisfaction. Far from an austere and puritanical approach based on denying ourselves "fun", we must nurture the enjoyment that comes from being present and socially engaged in meaningful but exciting communal activities. The concept of "enough" must be put centre stage, not just for the sake of our attention spans and our mental health, but for the health of the planet.

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AT THE EDGE

FRONTIERS OF CLIMATE ADAPTATION

Adaptation is today's buzzword in climate discussions. From workers' rights to questions of wellbeing, redistribution, global resource justice, and energy and food security, adjusting to the impacts of climate change is fraught with difficult political choices. As the world's fastest-warming continent and due to its historical responsibility for climate change, Europe is a frontier of adaptation in more ways than one. Within the green movement, however, the idea of managing climate risk is associated with defeatism: Why strive to live with a reality of destruction and inequality instead of changing it? By critiquing examples of maladaptation and showcasing stories of transformative change, this edition aims to come to terms with climate adaptation from a green perspective – that is, to sketch out the visionary political project that must underlie any credible attempt to "stay with the trouble".

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