

TRANSFORM

FOR ENVIRONMENT AND SUSTAINABILITY PROFESSIONALS

Environment ●
Economy ●
Society ●

Mar/Apr 2025
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Removing exploitation from
our supply chains

PLUS

A weather eye Friederike Otto on inequality as a driver of climate change

DEI hard Why diverse and inclusive businesses are more successful

Palm oil pilot Trials of a jurisdictional approach to certification

IEMA

Transforming the world
to sustainability

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TRANSFORM

Online exclusives



Social sustainability unpacked
 Agnes Chruszcz on why businesses are measuring their impact on society, and how you could help shape the evolving field of social sustainability.
www.bit.ly/social-sustainability-unpacked

A ticking time-bomb
 Edward Debrah on how an incident in Ghana's parliament opened up a debate on an urgent need for a national emergency response system.
www.bit.ly/Ghana-emergency-response

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Diversity rocks

SARAH MUKHERJEE MBE, CEO, IEMA

Hello and welcome to another issue of *Transform*. I hope you are having a positive and productive year so far; time seems to be flying by and it's incredible that we are already assessing our first-quarter achievements.

Earlier this year, it was my pleasure to facilitate a face-to-face meeting in the UK for our People of Colour and LGBTQIA+ networks. It was a joyful day of talks, workshops and mutual support. It brought home to me how much we can achieve when we meet in person. However, some companies are reported to be abandoning their diversity, equity and inclusion policies in the face of a very different political landscape in the US. IEMA fellow and social sustainability expert Beth Knight makes a powerful business case for diversity in the workplace.

Social sustainability practitioners aren't just concerned with what's going on in their own organisations – there is a suite of measures, frameworks and audits that governments expect large businesses to follow to keep their products and services free from exploitation. But how easy is it to have confidence in your supply chain and to ensure that you are following the law? Vivienne Russell investigates, 10 years after the introduction of the UK's Modern Slavery Act.

March and April are two of the busiest months in the professional cycling year, with numerous events across Europe. The cycling season continues with the Giro d'Italia in May and the Tour de France in July, both of which attract cyclists from across the planet. The machines used cost thousands of pounds and are made to the most specific requirements. Most of us will use our bikes to get some fresh air, support our health and cut down on our carbon. But, as Rick Gould discovers, the race is on to reduce the carbon that's embedded inside bike frames.

We welcome your feedback, as well as any suggestions for articles for future editions of *Transform*. It's always great to hear what you think of the magazine and how we can help you on your professional journey.

"There is a suite of measures, frameworks and audits that governments expect large businesses to follow to keep their products and services free from exploitation"



IEMA Transforming the world to sustainability

Following a vote by the membership, IEMA's application to change its name to The Institute of Sustainability and Environmental Professionals (ISEP) has been approved by the UK government, via Companies House. Changing our name and brand from IEMA to ISEP will be a gradual process as we transition between our old name and the new one.

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The income generated from advertising in TRANSFORM goes towards the production and distribution costs of the magazine, leaving more of your membership fee to help us in our mission to transform the world to sustainability.

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ROUNDUP

NEWS
AND
VIEWS

CONSUMPTION

Wealthy Brits cling on to lifestyles in 'climate contradiction'

The UK's top earners are willing to adopt green technologies such as heat pumps and electric vehicles, yet they remain unwilling to compromise their lifestyles to cut emissions.

That is according to a new study by the University of Bath, which found that the highest-income households produce three times the emissions of the poorest, but also suggests they may hold the key to accelerating climate action.

Half of households earning more than £200k bought an electric vehicle in 2022 – compared with just 8% of middle-income and 2% of low-income households – and are more likely to install heat pumps and take advantage of government subsidies.

Furthermore, 81% of wealthy individuals surveyed said that "urgent"



Many UK top earners remain frequent flyers

climate action is needed, compared with 68% of others, and are more likely to understand terms like net zero and support stronger climate policies.

The study also found that 42% of wealthy individuals believe they can influence businesses through their purchasing power – compared with 12%

of those on lower incomes – and 60% hold managerial positions, giving them the ability to implement corporate sustainability initiatives.

However, they consume significantly more across food, transport and shopping – especially when it comes to frequent flying and luxury goods – with many underestimating the impact of flying and beef consumption and overestimating smaller actions like recycling.

"It's crucial that policymakers focus on making sustainable choices more accessible and appealing for everyone," said Dr Sam Hampton from the University of Bath's Department of Psychology. "The wealthiest individuals have a unique opportunity to lead the way. With the right incentives, they could become key players in driving the shift towards a greener, more sustainable future."

ECONOMY

Climate inaction could slash global GDP

A study by Boston Consulting Group (BCG) has found that the net economic cost of climate inaction could be 11%-27% of cumulative global GDP by 2100. That is equivalent to three times the world's healthcare spending, or eight times the amount needed to lift everyone out of poverty.

The study also suggests that investing 1%-2% of GDP on climate mitigation could limit global warming to 2°C, reducing economic damages to 2%-4%.

For this to happen, mitigation investments must increase ninefold by 2050,

which could return five to 14 times the original investment, the researchers found.

The timing of climate investments is the challenge, with 60% needing to come within the next 25 years, as 95% of the economic damage from inaction would occur after that point.

"The economic case for climate action is clear, yet not broadly known and understood," said Annika Zawadzki, BCG managing director and partner. "Investment in both mitigation and adaptation could bring a return of around tenfold by 2100."

DIVERSITY

Greenpeace UK sets out diversity goals

Environmental charity Greenpeace UK has announced new race and ethnicity representation goals, committing to match the diversity of London at every level of the organisation.

It's aiming for 38.3% of its staff to identify as People of Colour (PoC) by 2030, and to close its ethnicity pay gap – currently at 5.6% – as it has done with its gender pay gap.

Greenpeace UK said it will conduct a situational analysis across all departments to understand barriers to attraction, recruitment, retention and progression.

This comes after *The RACE Report* revealed that just 4.5% of staff at environmental charities identify as PoC and other racially or ethnically minoritised groups, compared with 16% across all sectors.

"We cannot win on protecting our climate and biodiversity without an embedded understanding of how they intertwine with the diversity of human societies," said co-executive director of Greenpeace UK, Areeba Hamid. "These goals quantify our commitment to diversity in a way that demands and enables concrete, measurable progress."

ENVIRONMENTAL MANAGEMENT

Guide sets out the benefits of environmental management

BY LESLEY WILSON

Environmental management underpins successful sustainability actions. In a new paper published by IEMA, *How Environmental Management Can Deliver Value to Organisations*, chair Matthew Goldberg and others from the IEMA Environmental Management Network set out the benefits for organisations of a systematic approach to understanding, measuring and managing environmental impacts.

Of the top 10 long-term risks identified in the World Economic Forum's *The Global Risks Report 2025*, five are environmental. The IEMA paper gives an overview of what an environmental management system is, how it can benefit organisations, how it fits into other management systems, and the value of environmental management to operations.

The paper is aimed at non-environmental/sustainability senior executives and managers, but it can be used by all sustainability professionals to



build business cases or simply to share with key decision-makers.

Environmental management is a well-established tool that can improve environmental systems and processes, resource efficiency, innovation, and legal and regulatory compliance, as well as positively contribute to sustainable development.

Using this kind of auditable framework can help to measure progress over time, support iterative thinking, and show employees, customers, partners and regulators how the company is managing its environmental risks and taking advantage of opportunities. It can help organisations plan for an uncertain environmental future.

Understanding what is material can drive value in the environmental management system. The materiality of the risks and opportunities previously identified will shift with time and, as an organisation's maturity grows around environmental management, the lens it uses to identify and assess value will change and grow too.

This new paper from IEMA is invaluable in setting out the case for environmental management and how it can add value to the processes, targets and outcomes of an organisation, for all non-experts and decision-makers.

The paper is available at www.bit.ly/environmental-management-value



IMPACT ASSESSMENT

IEMA calls for clarity in draft guidance on scope 3 emissions

BY RUFUS HOWARD

The IEMA Impact Assessment Climate and Greenhouse Gases Working Group has responded to the UK government's draft supplementary guidance on assessing scope 3 emissions from offshore oil and gas projects.

Emphasising the urgency of aligning with the UK's net-zero targets and the Paris Agreement, we advocate for robust environmental impact assessments that include a 'do nothing' baseline scenario, comprehensive scope 3 emissions accounting and clear criteria for evaluating significance.

The response highlights concerns over the current guidance's lack of clarity on mitigation measures, cumulative effects and the assumption of substitution effects.

We stress the need for transparency, accuracy and adherence to established good practices, urging the government to ensure that all emissions, wherever they occur, are accounted for under UK responsibility. The call aims to strengthen climate resilience and support sustainable development.

POLICYWATCH

BY BEN GOODWIN

Engaging with government

In the previous issue of *Transform*, I wrote about IEMA's submissions to select committee inquiries focused on housing growth and clean energy jobs. Now that the committees running those inquiries have published our evidence, we are able to share it more widely.

Our submission to the Environmental Audit Committee's inquiry on housing growth is at www.bit.ly/housing-growth-IEMA. It focuses on the need to ensure that high-quality impact assessment remains a central feature of the new planning system for the government's house-building programme.

Our response to the Energy Security and Net Zero Committee's inquiry on workforce planning for clean energy is available at www.bit.ly/clean-energy-workforce. We made the case for a broader green jobs approach – in effect, making clean energy jobs provision part of a strategic approach to greening the workforce as a whole.

We continue to deliver our public affairs roundtable series to bring our members closer to parliamentarians active in the skills and sustainability space. In a session with Lauren Edwards,



Lauren Edwards MP

co-chair of the Skills, Careers and Employment All-Party Parliamentary Group, we outlined the need for an integrated green jobs plan.

Lastly, I have been representing IEMA at the Council for Sustainable Business (CSB), the government body responsible for engaging the business community in implementing the Environmental Improvement Plan, including the revised version due to be published this summer.

CSB is interested in case studies, ideally international, that demonstrate how businesses have benefited financially from investing in environmental and nature projects. Please email your stories to policy@iema.net.

SOCIAL SUSTAINABILITY

Paper outlines the power of social sustainability to build a better future

BY AGNES CHRUSZCZ

Sustainability is often associated with environmental efforts, but social sustainability is an equally vital component in shaping a better future.

Following feedback from our members on the increasing focus on the social aspects of sustainability in their work and organisations, IEMA set up a steering group to help guide and inform our approach to policy and advocacy as well as help shape and share best practice. The group has published its

first guide, *The Social Sustainability 101*, which sets out key terms and positions them in the wider concept of sustainable development for all.

The guide's key message is that true sustainability cannot be reached without ensuring that people live fulfilling lives on our finite planet, now and in the future, with equal access to resources, opportunities and wellbeing.



Social sustainability initiatives focus on fairness, equity and community empowerment. They help tackle complex issues such as diversity and inclusion, fair

labour conditions, access to education and healthcare, and community cohesion. Organisations are now recognising that they have a responsibility to contribute positively to society.

The business case for social sustainability is also clear. Companies that prioritise employee wellbeing, ethical supply chains and social responsibility often see increased productivity, stronger customer loyalty and enhanced brand reputation. Socially responsible businesses not only mitigate risks such as modern slavery or supply chain volatility, they also attract top talent.

Visit www.bit.ly/Social-Sustainability101 to read the full guide.

CONSULTATIONS

IEMA responds to planning and assessment reforms

BY CHLOË FIDDY

The UK government has continued with, and accelerated, the proposed planning and environmental assessment reforms that have been debated in 2020-2024.

IEMA has continued to respond to key consultations, and, in recent months, has published responses to the following planning-related matters:

- Planning Reform Working Paper: Streamlining Infrastructure Planning
- Planning Reform Working Paper: Development and Nature Recovery
- The Environmental Audit Committee's inquiry on environmental sustainability and housing growth
- Reforms to the National Planning Policy

Framework and other changes to the planning system.

At the time of writing, we are awaiting the publication of the Environmental Outcomes Reports roadmap. We are also currently working on the response to the Land Use Framework consultation.

To get involved in shaping IEMA policy responses, join the Impact Assessment (IA) Network or consider applying to join the IA Steering Group, which recruits members annually.

Visit www.iema.net to read our responses in detail and other crucial impact assessment policy engagement.

A safe space

IEMA's senior communication officer, **Farhana Khan**, reports from the Diverse Sustainability Initiative's second in-person gathering

IEMA's Diverse Sustainability Initiative (DSI) hosted its second in-person event last month, marking four years since its launch in March 2021.

The DSI aims to use education, connection and transparency to transform diversity within the sustainability profession and wider environmental sector so that it reflects modern Britain.

Its latest gathering, held in Birmingham, came only a month after *The RACE Report* revealed that just 4.5% of staff in environmental charities identify as People of Colour and other racially or ethnically minoritised groups, compared with 16% across all sectors.

The day started with networking at a safe and welcoming office space provided by recruitment firm Hays, with IEMA CEO Sarah Mukherjee MBE declaring: "It is a privilege when young people choose to work in this sector. We should celebrate and support them, whatever background they come from."

Our first session was with award-winning diversity, equity and inclusion (DEI) consultant Barry Boffy MBE, who told us that, despite 'anti-woke' sentiment, DEI isn't going anywhere. In fact, he has experienced an increase in enquiries following Trump's election in the US.

He talked us through hot topics in DEI for 2025, noting civil unrest and the testing of UK Equality Act legislation in the courts, before explaining that the business case for DEI is clear: innovation and growth comes with challenging the status quo.



Clockwise from top: Caris Graham, Barry Boffy and Pam Burrows giving inspirational talks

Next was a 'people-booster' session led by professional speaker and training provider Pam Burrows, who specialises in wellbeing and dealing with burnout and stress.

Her high-energy workshop went through different approaches to DEI to help support wellbeing, with an emphasis on listening to and learning from lived experiences, and challenging bias in decision-making and leadership.

None of us have just one identity, she explained, with multiple intersecting identities influencing our life experiences, barriers and successes. So a one-size-fits-all approach to DEI is

inherently exclusive, and can compound existing biases.

Burrows also stressed that DEI should be constructive, rather than destructive, and create harmony in the workplace.

We were invited to pledge how we would advocate for DEI and wellbeing, before IEMA's senior diverse sustainability officer, Caris Graham, gave an update on the DSI's plans for 2025.

These include an overview of its People of Colour pilot mentoring scheme, which has seen 19 mentees matched with 18 mentors to address the need for positive role models and advocates to help underrepresented groups thrive in the sector.

After a final hour of networking, there was an overwhelming sense of positivity and optimism, and a feeling that, despite challenges, progress can be made through community, advocacy and action.

For Farhana Khan's full report visit www.bit.ly/DSI-empowering-change



From left: IEMA's Rebecca Turner and Caris Graham

REGIONAL GROUPS

IEMA Europe hosts engaging activities for IEMA members. Focused on education and inspiration, they are tailored to foster a deeper understanding of environmental practices, promote professional development and empower members to drive meaningful change in their fields.

In this issue, Johanna Flood MIEMA reports on the overconsumption of the planet.

Detailing the disaster of 'Konsumindre'

Each year, we consume more. Globally, the fashion and electronics industries are booming, and materials use has tripled since 1970.

In Sweden, on average, we each buy 14kg of new clothing and textiles every year, but throw away 7kg. On average, we use a garment seven times before disposing of it.

The trend is clear. We purchased 40% more textiles in 2022 than in 2000. In 2016, Swedes spent 44% more on interior decoration than in 2006, and EU electronics sales increased by 85% between 2013 and 2022.

Since 1970, the use of raw materials has increased by more than 300% and is expected to go up by another 60% by 2060.

There is a strong correlation between consumption and environmental degradation. Materials account for 90% of water stress and biodiversity loss, and 60% of climate change.

In Europe, we have used 83% of freshwater reserves, and, worldwide, vertebrate animal populations have fallen by 73% since 1970, according to the Swedish Agency for Marine and Water Management and the World Wide Fund for Nature respectively.

Most of us shop to lift our mood rather than because we need more products, yet there is little evidence that it works beyond a short dopamine rush. However, a lot of money goes into making us think that shopping will make us happier, prettier or healthier. In 2024, \$1.76trn was spent on marketing.

On our planet, the richest 10% of people are responsible for 50% of greenhouse gas emissions, while those most affected by climate change are often least responsible for it. Some of us use too many materials, such as concrete, steel and textiles, and others too few. In Sweden, we use roughly 25 tonnes of materials per person per year, compared with two tonnes in many other countries.

We have transgressed six of the nine planetary boundaries, and the link between environmental impact and raw material use is clear. Some of us need to stop shopping to enable others to develop. How do we make this shift?

JOHANNA FLOOD is an IEMA Europe committee member and author of *Konsumindre*, about overconsumption
● Visit www.iema.net/world-networks for more details on IEMA Europe and other IEMA world networks



FELLOWS CORNER

MONDAY 28 APRIL
13.30-14.30 BST

Webinar: Women in the sustainability and environmental profession: IEMA Fellowship and demonstrating leadership

As we extend our deepest thanks to Dr Lowellyne James for his excellent tenure as the inaugural chair of the IEMA Fellows Steering Group, we will welcome new chair Diana Lock (previously vice-chair) and new vice-chair Dr Rosemary Horry. Supported by the Steering Group and wider network, both are committed to increasing the diversity of the Fellows Network and demystifying access to this top level of membership.

Chaired by IEMA's CEO Sarah Mukherjee MBE, please join our panel for an engaging session, followed by a Q&A.

The webinar will be available to all IEMA members on Watch Again.

● To register for the event, visit www.iema.net/engage/events

WEDNESDAY 18 JUNE
12.00-13.00 BST

Online: Fellow member upgrade digital workshop

Delivered by an experienced Fellow and Full member assessor. Learn to understand the application process and ask questions. The session works best for those who have begun their applications.

● To register visit www.bit.ly/Upgrade-Workshop

Blog: Turning challenges into opportunities

Hear from Gill Mulroe FIEMA on her neurodiverse journey in sustainability and how her experiences have taught her the importance of a solutions-based approach.

● Read the blog at www.bit.ly/neurodiverse-journey



Neil Howe reports on some long-standing and important changes in waste requirements for your business in this legislation update

It's very rare to get legislation changes that affect everyone, so this issue focuses on the new waste requirements and what you need to worry about, along with a round-up of everything else in between.

Separation requirements

New waste separation requirements came into force at the end of March in England. From 31 March 2025, all workplaces must have their recyclable work streams collected separately. That's glass, metal, plastic, paper and card, and food waste. If you have fewer than 10 employees, you're exempt, until 2027. There are also some exemptions that your waste contractor can apply. They can agree to collect glass, metal and plastics as a mixed stream. They can also carry out a 'technically, environmentally and economically practicable' (TEEP) assessment and include paper and card in that too, if they meet the criteria for doing so. However, food waste *must* be collected separately.

🔗 tinyurl.com/yjbfu5ha

Deposit return scheme

Defra has launched a deposit return scheme (DRS) for drinks containers in England and Northern Ireland. The new regulations will apply to single-use drinks containers made of aluminium, PET plastic and steel, and with a capacity of between 150ml and 3 litres. A redeemable deposit is placed on



Ireland already has a deposit return scheme in place

specific drinks containers that can be claimed when the item is returned to a collection point, such as a local supermarket. There's no need for a receipt or proof of purchase, so anyone can return a container, as long as it's in decent condition. The DRS will be introduced in October 2027.

🔗 tinyurl.com/mt9df2pm

Digital tracking system delay

The UK government and the devolved nations have postponed the implementation of the Digital Waste Tracking system, which was due to come into force in April 2025. The system aims to replace paper-based waste tracking methods with a comprehensive digital platform. It is designed to provide real-time data on waste generation, handling and disposal across the UK. It will now apply from April 2026.

🔗 tinyurl.com/yc3ejeax

NEIL HOWE PIEMA is head of writing at Barbour EHS

ON THE WATCHLIST

Some of the most interesting new policy and legislation being proposed

Nature restoration in Scotland

The Natural Environment (Scotland) Bill is before parliament and aims to improve biodiversity and regenerate the natural environment. It would set legally-binding nature restoration targets and modernise how national parks and deer are managed. It is a key part of the Scottish government's Strategic Framework for Biodiversity and complements its Biodiversity Strategy.

🔗 tinyurl.com/4n4dx5fv

Raising energy standards

The government plans to raise minimum energy efficiency standards to C, as shown on an energy performance certificate, for privately rented homes in England and Wales by 2030. The aim is to deliver savings on energy bills and to reduce carbon emissions, ultimately delivering the statutory 2030 fuel poverty target.

🔗 tinyurl.com/bdd9u5tr

Extending the UK ETS

The UK Emissions Trading Scheme (ETS) authority is proposing to extend the UK ETS beyond phase 1, which ends on 31 December 2030. The long-term pathway for the scheme was published on 18 December 2023, setting out the intention to continue the UK ETS until at least 2050.

🔗 tinyurl.com/3zmxafkh

Environmental governance review

A review into environmental governance in Northern Ireland has begun and will consider options for improvement, including the possible creation of an independent environmental protection agency.

🔗 tinyurl.com/bdxfmxaw

IN COURT

A County Durham man has been jailed for operating an illegal waste site in a prosecution brought by the Environment Agency. He had previously pleaded guilty to two

charges of operating a waste site without an environmental permit.

🔗 tinyurl.com/29ma2m42

Lastly, in case law, the ocean conservation charity Blue Marine

Foundation has challenged the UK government, and specifically Defra, for setting fishing quotas higher than scientists' advice.

🔗 tinyurl.com/d6y2rjdm

UNFAIR WEATHER

The extent to which climate change affects extreme weather events has been the focus of **Dr Friederike Otto**'s career. She tells Chris Seekings why tackling global inequality is central to her work



“There are increasingly few extreme weather events where climate change did not play a role

”
An ailing social and infrastructure system, poor local decision-making and planning, and a lack of mobility for people in Madagascar were more to blame for the devastation brought by the drought.
Ignoring these structural failures allows the status quo to continue, Otto argues, weakening the weakest even further and creating a politically convenient narrative.
“As well as cutting emissions, we have to be much more conscious of how we actually increase livelihood options and resilience for people in a sustainable way,” she says.

The colonial fossil narrative
Otto says that Madagascar is a clear example of how closely adaptation is connected to justice, explaining how vulnerability often determines whether or not an extreme weather event develops into a disaster.
“Every time we do an attribution study, we look at who is affected by these events and why. In every single study, we find these events are affecting those who are already most vulnerable, increasing the gap between those who are less vulnerable, which really brought home to

It's the question that so many of us ask each time an extreme weather event strikes: is climate change to blame? Politicians and journalists are quick to jump to conclusions, leading to uninformed arguments and headlines before scientists have had a chance to present the facts.
As co-founder of World Weather Attribution, Dr Friederike Otto has been instrumental in linking natural disasters to human-made global warming for more than a decade, and was named one of the world's 100 most influential people by *Time* magazine in 2021.
Working with scientists around the world, her team uses weather observations and computer modelling to quantify how climate change influenced the intensity and likelihood

of an extreme weather event in the immediate aftermath.
Her work also highlights how global inequality is both driving climate change and being made worse by it, encouraging actions to make communities and countries more resilient and prevent future disasters.
New year, same story
It was just seven days into the start of this year when one of the most devastating wildfires in modern US history struck, with hurricane-force winds sending flames ripping through California and claiming the lives of 28 people and displacing thousands.
Three weeks later, World Weather Attribution concluded that human-induced global warming made the fires around 6% more intense and 35% more probable.

“There are increasingly few extreme weather events where climate change did not play a role,” Otto explains.
“The biggest change we see globally is extreme heat, but we are also witnessing heavy rainfall, with the floods in Valencia last year, for example. Countries are experiencing weather events that they have never seen before, so even if there are early warnings, people just don't know what to do because they are not aware the weather can be so deadly.”
That's not to say that all natural disasters are caused or made worse by climate change. Take, for example, the

2019-21 drought in Madagascar, which saw hundreds of thousands of people suffer from food insecurity and famine. “It was labelled as the first climate change-induced famine, but that's just wrong, because it wasn't climate change that caused the famine,” says Otto, who also works as a senior lecturer at the Centre for Environmental Policy at Imperial College London.
“It might have made the drought a bit worse, but, even if the drought hadn't been quite as bad, the impact would have been devastating because of the high vulnerability.”

Dr Otto considers whether climate change is to blame for natural disasters, such as wildfires in California and droughts in Madagascar, and whether colonialism has exacerbated the “unequal distribution of costs and benefits” of burning fossil fuels

me how inequality and climate change are linked.”

In her latest book, *Climate Injustice: Why We Need to Fight Global Inequality to Combat Climate Change*, published this month, Otto outlines how “the legacy of colonialism permeates everything”.

Although climate change would still have existed if Europe hadn’t conquered any colonies and humans had still burned fossil fuels, Otto argues that “climate change would have looked very different without the West’s ongoing colonial mindset”.

“You would not have this big Global South, Global North divide in how the benefits of burning fossil fuels were distributed in the beginning,” she tells me. “The very unequal distribution of costs and benefits that we see today would not be so without that colonial heritage.”

Both developing and developed countries continue to argue that, for reasons of fairness, the Global South must initially have very high greenhouse gas emissions to grow their economies – ignoring the fact that the poor will pay for the lifestyles of a small number of wealthy people.

Otto refers to this as the “colonial fossil narrative”, explaining how the rich and powerful fossil fuel industry shapes our global perception of what constitutes a desirable life.

“There is this very strong narrative that burning fossil fuels increases our standard of living and makes lives better, which, of course, is not the case – it is access to cheap energy that does that.

“At the beginning of the Industrial Revolution it made life a lot worse for most people that were working in factories, but that’s not the story we are telling. We are telling the story that burning fossil fuels makes your life better, and that it’s unfair not to do so, which is a really difficult narrative to address.”

Power struggle

Otto describes her new book as being about “climate change and poverty, sexism, racism, arrogance, ignorance and power”. It comes at a time when US president Donald Trump’s “America first” mantra is seemingly resonating with voters, and when advocates for diversity, equity and inclusion are increasingly under attack.

Many looking to advance the environmental and sustainability agenda are fearful that linking issues of race and sexism will turn people away from green policies. “But that’s what the right-wing politicians really want us to believe,” Otto counters. “Now it is more important than ever for those of us who don’t want to live in a world where Trump and his cohort set our narratives to push back, and not be afraid to talk about something just because Trump might not like it. We’ve seen political parties doing that, and it’s not working.”

I speak to Otto just days before elections in her native Germany, where

“There is this very strong narrative that burning fossil fuels increases our standard of living and makes lives better, which, of course, is not the case”

the far-right AfD surged in the polls to secure 20.8% of the votes, finishing second to the conservatives; doubling its support in just four years.

“None of the progressive parties really provide a vision of what the world should look like, whereas, of course, the conservative parties and right-wing parties all want to go back to this society that never really existed, where everyone was burning as much oil and coal as possible, and everyone was happy.



“Even the parties on the left have moved very much to the right, and have completely changed their narrative on migration – the only thing that does is provide more support for Trump, where we live in a world where we can’t talk about racism and tackling inequality.”

The subject of inequality was brought into sharp focus at last year’s COP29 climate summit in Azerbaijan, a petrostate where the £300bn in climate finance from developed countries agreed for developing ones by 2035 fell far short of the \$1.3trn that economists say is needed.

“I was not surprised, because the last two COPs have both been hosted by countries with a very vested interest to not have strong deals,” Otto says. “The next conference in Brazil should be a much better platform for these discussions since it has a government that is at least aware of the importance of combating climate change, the welfare of citizens, and resilience.”



New heroes

Ultimately, Otto says that the ambition of these conferences has always been about protecting human lives and countless livelihoods.

As her book explains: “Climate change does one thing above all else: it curtails fundamental rights. The right to life and freedom, the right to free movement, the right to property, to social security, to welfare, and not least the freedom of cultural life. These are all universally recognised human rights. The Paris Agreement is a human rights treaty, not a treaty on the protection of polar bears or on charity for the Global South.”

Describing extreme weather as a singular moment that tells us something about climate change, and nothing more, conceals the inequality that has just as much of an impact on the weather’s effects, she says.

“I think it’s important to not just talk about climate change, because vulnerability plays a huge role as well,

and what we usually see is the reporting focused on either/or, which is really not helpful because we need to address both.

“In science there is slowly a change where you have fewer people working in silos and there is much more crossover between natural sciences and social scientists, but that takes time to penetrate through.”

However, she reiterates how we must break free from the colonial fossil narrative if we are to successfully address global inequality and escape from the perils of exponential extraction and consumption.

“All our heroes in movies and so on are driving into the sunset in cars on big roads, and it’s so ingrained in all the images and symbolism that we have, so there’s a big task for all of us to find other heroes, and that’s a job for artists, for writers, for scientists, and also policymakers.

“We will not change this by just acting on a consumer basis or from a place of guilt.” She continues: “When you look at indices such as the Human Development Index and World Happiness Report, they always show that people are happiest in places where inequality is low, because it allows you to do the things that humans need to thrive.

“I hope people will think about how they can help change our underlying social structures and create heroes that live in a world that is not totally beholden to the colonial fossil narrative.”

Climate Injustice is available to pre-order at www.bit.ly/Climate-Injustice-Greystone





THE FUTURE OF FAIRNESS

Beth Knight paints a picture of a world where diversity, equity and inclusion are fundamental pillars of business

The debate surrounding diversity, equity and inclusion (DEI) initiatives in corporate America has significant global implications, with several notable brands scaling back or eliminating their programmes. As sustainability professionals, it's crucial to recognise that a sustained focus on DEI is not just nice to have – it's essential for ethical and sustainable business management. So what are the key points of debate? And how can we find innovative ways to maintain DEI commitments?

The shifting DEI landscape

Notable US-headquartered global brands are making significant changes, with Harley-Davidson announcing last August that it had not operated a DEI function since April 2024 and would remove hiring quotas and minority-owned supplier goals.

In parallel, John Deere stated that it would no longer support "social or cultural awareness" events and would review all its training resources. Meanwhile, Ford ceased to participate in the Human Rights Campaign's Corporate Equality Index.

Last November, Walmart also announced the end of some DEI efforts, including the consideration of gender and race in evaluating companies participating in its supply chain. This was followed by McDonald's stating that it would halt some DEI initiatives, including goals for diversity within its senior leadership ranks.

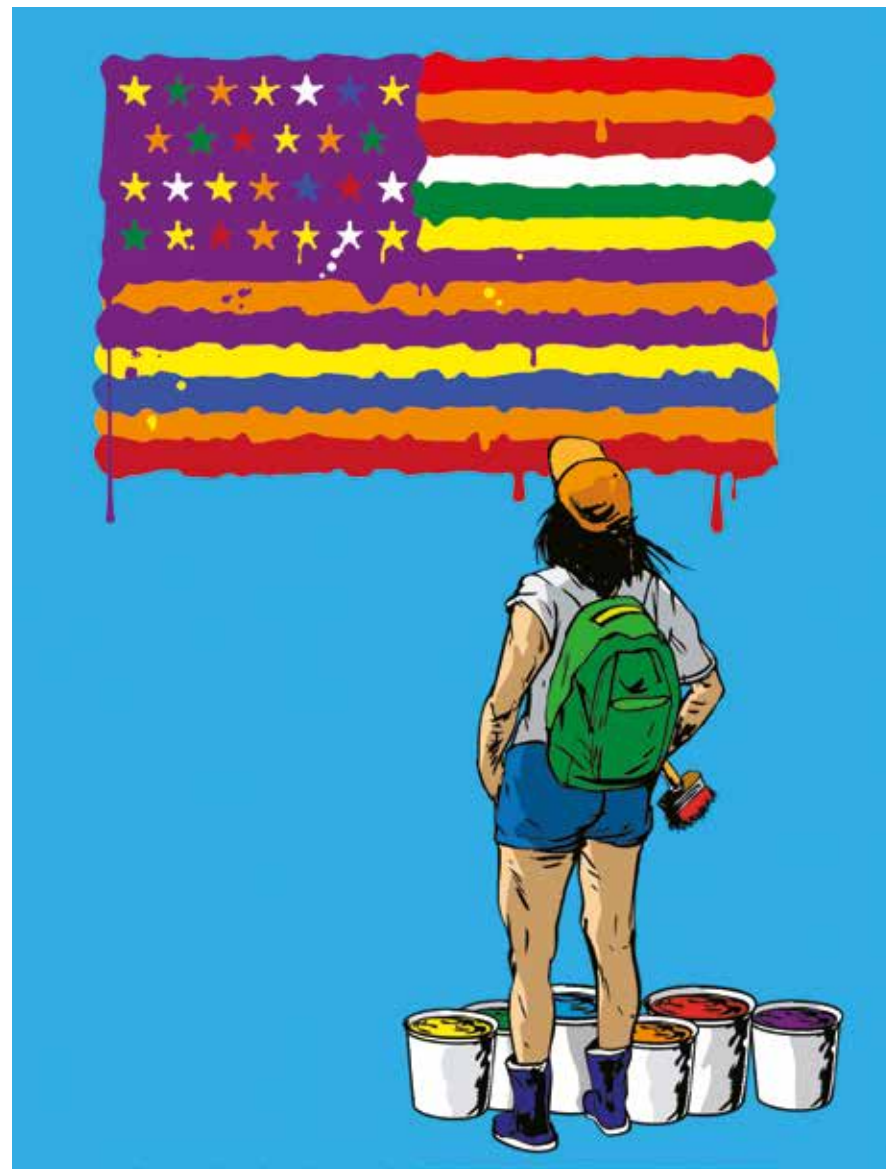
In January, Meta (parent company of Facebook and Instagram) announced the termination of several DEI programmes. Meanwhile, Amazon, which has been "winding down outdated programmes and materials" since 2024, deleted content sections titled 'Equity for Black people' and 'LGBTQ+ rights' from its 'Our Positions'

web page, which outlines the company's stance on social and political issues.

The US federal landscape has also been shifting. Within hours of being sworn in, President Trump placed DEI workers on leave, removed DEI measures for federal agencies and contractors, and eliminated DEI in the military. Concurrently, major retailer Target announced that it was

discontinuing its diversity initiatives, including renaming its 'supplier diversity' team to 'supplier engagement'.

While one in eight US-headquartered companies say they plan to weaken DEI commitments in 2025, others are remaining strong. Influential CEOs – including (but not limited to) JPMorganChase's Jamie Dimon, Scale



PPAINT / IKON IMAGES

AI's Alexandr Wang, Pinterest's Bill Ready and Nasdaq's Adena Friedman – have reaffirmed their commitment to DEI. Additionally, Costco shareholders voted against ending the company's DEI efforts.

Arguments for scaling back

Political pressure has seen DEI initiatives framed as promoting a 'woke' agenda, leading to some companies abandoning such efforts. For example, Elon Musk posted on social media platform X that "DEI must DIE", contributing to the anti-DEI narrative.

Economic concerns have also caused some to argue that DEI (and environmental, social and governance) initiatives are costly and do not directly translate to increased profits. The phrase 'go woke, go broke' alludes to the legal and reputational risks of 'doing the right thing' at the expense of a business's bottom line.

Critics argue that DEI initiatives can lead to reverse discrimination, with a common concern being that they compromise merit-based hiring practices and lead to hiring under-qualified candidates to meet diversity quotas.

However, these concerns pale in comparison with the list of arguments against scaling back DEI commitments.

Reasons to embrace DEI

Business benefits. Research shows that diverse and inclusive companies are more innovative and successful:

- Companies in the top quartile for gender diversity typically outperform their peers by +25%
- Companies in the top quartile for ethnic diversity typically outperform their peers by +36%
- Inclusive companies earn 2.5 times higher cashflow per employee and are 1.7 times more likely to be leaders in innovation
- Inclusive teams are over 35% more productive and deliver 60% better results – making decisions twice as fast with half as many meetings.

Talent attraction and retention. DEI initiatives can attract top talent and improve employee morale. Companies that close or significantly reduce their DEI functions expose themselves to long-term risks, including:

- Diminished ability to compete for talent, as inclusion and equity are increasingly valued by employees
- Costly levels of employee turnover and increased susceptibility to lawsuits, discrimination incidents and hostile work environment claims
- Reputational damage affecting market position and public sentiment among customers, clients and prospective partners.

Societal impact. When large corporations actively promote diversity and inclusion, it sends a powerful message and contributes to broader social change. Examples include:

- When Unilever committed to paying all employees a living wage, it prompted other companies to review their wage structures and implement similar policies
- Vodafone's returners programme, ReConnect, has helped women in 26 countries re-enter the workforce after career breaks and spurred other companies to follow suit
- Lloyds Banking Group's *Black British. In Business & Proud* report has prompted cross-industry collaborations, such as the Channel 4 Black in Business campaign and the Foundervine Immerse Catalyst business accelerator programme

"Research shows that diverse and inclusive companies are more successful"

- PepsiCo has shown how to overcome legal data constraints by implementing a global self-ID campaign across 33 countries to support the inclusion of LGBTQI+ employees globally.

Where do we go from here?

While some companies are scaling back their DEI activities, others are innovating to enhance the impact of their commitments. For corporate sustainability professionals, our path forward is clear – we must champion DEI as an integral component of sustainable business practices.

The business case for diversity has never been stronger. Research consistently shows that diverse and inclusive companies outperform their peers, driving innovation and financial success. Moreover, the impact of inclusive corporate initiatives extends far beyond the workplace, contributing to broader social progress.

Our priorities should be to ground our DEI efforts in data-driven approaches that demonstrate long-term value and return on investment, while continuously educating ourselves and our organisations on DEI's crucial role in building sustainable, resilient businesses.

We must also innovate our strategies and propositions to address intersectionality and respond to evolving societal needs, foster cross-industry collaborations to share best practices and amplify our collective impact, and engage leadership to ensure that DEI remains a strategic priority, integrated into core business operations.

The future of fairness depends on our collective commitment to creating inclusive workplaces where everyone can thrive. We have a unique opportunity to lead this charge. Let's rise to this challenge, championing DEI as a fundamental pillar of sustainable business in years to come.

BETH KNIGHT FIEMA is a leader in social sustainability and driving transformational change within large multinationals

GET OUR ACT TOGETHER

Rooting out forced labour from supply chains is key to making them more sustainable. A decade on from its enactment, does the UK's Modern Slavery Act need strengthening? **Vivienne Russell** investigates

It has been 10 years since the Modern Slavery Act was passed into UK law by David Cameron's government. At the time, ministers hailed it as "landmark legislation".

"If you are involved in this vile trade, you will be arrested, you will be prosecuted and you will be locked up," said then Home Office minister Karen Bradley as the legislation came into force at the end of July 2015. Now there are questions about the impact of a law that has arguably stood still while the rest of the world has brought in tougher regulations that are changing business practices.

Modern slavery is an umbrella term that includes a range of practices, including human trafficking, where people are recruited or moved for exploitative purposes, and forced labour, where people are required to work under threat of punishment.

"The key thing is that it's exploitation of someone else for personal or commercial gain," explains Sian Lea, business and human rights manager at Anti-Slavery International, an NGO and advocacy group that has campaigned against slavery since 1839.

An estimated 50 million people worldwide are caught up in some form of modern slavery, according to Lea. Within supply chains, where Lea focuses her work, there are an estimated 17.3 million people in forced labour, and an additional

four million people forced into work by their governments. She gives the example of people in the Uyghur region of China, who are subject to persecution, and the Turkmenistan government, which exploits some citizens for economic gain as well as coercion and control.

The economic cost is also significant, with the International Labour Organization (ILO) estimating that modern slavery is generating \$236bn in profits for the criminal perpetrators each year. According to the ILO, this is money that is

stolen from workers and governments through lost wages and tax revenues.

Dr Maryam Lotfi is co-founder and co-director of the Modern Slavery and Social Sustainability Research Group at Cardiff Business School. She estimates that, across the G20 nations, around £50bn worth of products are being imported where there is a risk of modern slavery.

Slavery is everywhere

"We are importing all kinds of goods where we are aware there is a risk that they are produced by modern slavery somewhere in the world," she says, adding that this risk exists in many different product lines and sectors.

"It exists in construction. It exists in manufacturing, mining and agriculture. It exists in our phones, our laptops, textile garments and palm oil. So, it is almost everywhere, according to the statistics that we have."

With the complexity, size and scope of modern supply chains, it can be challenging for manufacturers and retailers to have oversight of all activity, from raw material extraction to the consumer purchase point.

Given this complexity, how can consumers make ethical choices when it comes to purchasing products that are slavery-free? Lotfi's research group has secured funding to examine levels

NICK LOWNDES



"We are importing all kinds of goods where we are aware there is a risk that they are produced by modern slavery"

of awareness among the public and what might be done to change habits. She highlights some apps and websites that will provide information on modern slavery, but there is not a universal labelling scheme to help inform consumers.

However, at Anti-Slavery International, Lea suggests that a labelling or kite mark scheme would not be easy to implement or monitor. Because of the dynamic nature of supply chains, monitoring would need to be continuous and could not be based on a single annual audit.

Ethical purchasing also expects a lot of consumers. While information is included in companies' modern slavery statements – one of the requirements of the Act – studies have suggested that there is not always a direct link between what is disclosed in the statement and how ethical a company is. Expecting consumers to research and understand the issue themselves is "too high a burden", Lea says.

"What you really need to do is to put the onus on companies to do better – and to have liability if they don't –

Social sustainability

and on the government to make sure that it's not importing products made with forced labour."

The Modern Slavery Act requires commercial organisations to publish a modern slavery statement if they have a turnover of £36m or more – as must international businesses if they have a demonstrable presence in the UK, and charities and investment trusts if they meet the criteria. The statement must be updated every year, published on the company's UK website and be signed off by a director. While organisations are not expected to guarantee that their entire supply chains are 'slavery-free', they are expected to outline what steps they are taking to address modern slavery, both in their own business and throughout their supply chains.

A call for stronger statements

However, Lotfi says that enforcement of the Act is "very weak", with many companies not even bothering to publish a statement. Indeed, analysis by the Business & Human Rights Resource Centre found that 40% of eligible companies did not comply with the Act's reporting requirements. "When there is no enforcement, it is more like a tick-box activity," she tells *Transform*.

"We have some very good brands that are really working on ethical practices, but currently it's more like a tick-the-box approach."

Lotfi's research into modern slavery statements has indicated that some statements are republished, unaltered, in successive years. Some sectors are also better than others. She highlights the hotel sector as being weak on reporting, with many just publishing a short, two-page statement. With aspects of hotel staffing vulnerable to modern slavery, Lotfi is concerned that many don't want to report it or prioritise it, as there is no penalty for them.

So, while the Modern Slavery Act was progressive for its time – the UK was one of the first countries to have such an Act and "should be very proud of it", says Lotfi – other countries and the EU are now moving ahead.

Lea agrees that the UK has been left standing still, while parts of the rest of the

Social sustainability

world are putting in place more robust legislation. She acknowledges that the Act has been effective in raising awareness of modern slavery, particularly among businesses, but says that this alone isn't enough of a "tipping point to drive better practice". Warm words, a public registry and development of an assessment tool can mask import practices that run completely counter to the Act's intention.

"The government tripled its orders of latex gloves from a Malaysian supplier that was barred from the US at the time because of forced labour," Lea says.

She also highlights a BBC report from December 2024, which found that several UK supermarkets were selling tomato purée made from tomatoes that had been grown in China using forced labour.

"Nothing seems to be changing. Even if awareness has increased, we need to do something more. Something else needs to shift," says Lea.



Progressive laws

One example the UK could follow is the EU's Corporate Sustainability Due Diligence Directive, which came into force in 2024.

"It is the most progressive law, so [it] puts an obligation on large companies to essentially identify, prevent, mitigate and account for human rights abuse and environmental harm within their supply chains. And that's really important, because modern slavery doesn't exist in a vacuum," Lea explains.

"If we're only considering the sharpest end of that continuum of exploitation, we're ignoring things like non-payment of minimum wage, excessive overtime, punitive and illegal deductions, recruitment fees and debt bondage,



From cotton to garments and gloves, the products of forced labour are in the UK supply chain

[which] lead to that sharper end. We're also not accounting for enabling rights, like freedom of association, or the fact that the rights of people and the rights of the planet are very much interconnected and mutually reinforcing."

The US, too, is acting through a different legislative route – import bans. US legislation can block the supply of goods made with forced labour, and, in 2021, Congress approved the Uyghur Forced Labor Prevention Act, which was signed into law by President Biden and took effect in June 2022. The Act stops the import of all products from the region.

"It has had a tremendous impact," says Lea, reducing reliance on Uyghur cotton by 40%. Canada and Mexico have followed with similar import bans, and

the EU passed its own product ban late last year, which prevents goods made with forced labour from being traded within the bloc.

The proximity of the UK to the EU puts the country at risk of being a dumping ground for the re-routing of products made with forced labour, Lea warns, because there is an absence of legislation to address it.

The Labour government, led by former human rights lawyer Sir Keir Starmer, is sympathetic to the need to do more.

It responded positively to a House of Lords report, published in October last year, which called for the legislation to be made "world-leading again".

"The UK should be again at the forefront of driving for change and leading by example," the government said in its response to parliament. However, it warned that reform would not be "easy, straightforward or quick to achieve".

Under pressure to turn round a flagging economy, it remains to be seen whether much-needed reforms to tackle modern slavery will make it to the top of the legislative agenda.

VIVIENNE RUSSELL is a freelance journalist

SHUTTERSTOCK

"The rights of people and the rights of the planet are interconnected and mutually reinforcing"

Scotland's Peatland Standard

Developing the UK's first comprehensive peatland restoration standard

Peatlands are an iconic feature of Scotland's landscape, covering around two million hectares. They play a vital role in biodiversity, water management and carbon storage. These landscapes are a crucial component of Scotland's efforts to combat climate change, including as part of the Scottish government's ambitious target to restore 250,000 hectares of peatland by 2030. Peatland ACTION is developing Scotland's Peatland Standard to ensure efficient, consistent and impactful restoration.

Scotland's Peatland Standard will consolidate existing legal requirements and best practice into one comprehensive document. It will provide a practical, user-friendly framework for anyone involved in peatland restoration and management, from landowners and managers to contractors, ecologists and policymakers. By detailing robust methodologies and building consistency, Scotland's Peatland Standard will enhance restoration efforts, not only ensuring that Scotland's peatlands continue to play a vital role in carbon storage and water management but also safeguarding the rich diversity of species that depend on these unique habitats: from rare plants and mosses to birds, mammals and invertebrates.

Protecting and restoring peatlands tackles both the biodiversity and climate crises.

A flexible framework

Scotland's Peatland Standard will offer clarity by highlighting legal obligations and good practice. It will foster flexibility and innovation, allowing site-

specific decision-making while upholding overarching standards for effective restoration. It aligns with frameworks such as the UK Forestry Standard, promoting coherence across sectors.

Scotland's Peatland Standard is built on research and practical experience, recognising that peatland restoration is a maturing industry. Some techniques are well-established, while others are still emerging, so it is an iterative process. Scotland's Peatland Standard will reflect this reality, emphasising the importance of learning from successes and challenges, encouraging stakeholders to share knowledge and experience, promoting continuous improvement and innovation.

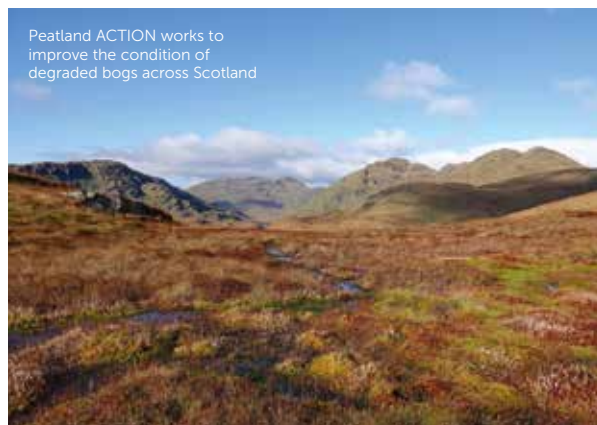
Supporting resources

Accompanying Scotland's Peatland Standard is the existing Peatland ACTION Technical Compendium. Later in 2025, Peatland ACTION will develop decision trees, providing additional guidance to aid decision-making and design. This suite of tools will provide an essential resource for practitioners seeking to deliver high-quality restoration projects.

Collaboration and knowledge exchange

Scotland's Peatland Standard is a collaborative effort shaped by input from specialists, including ecologists, scientists, engineers, land managers, government advisers, policymakers and practitioners. This diversity of perspectives will ensure it addresses the complex realities of peatland restoration and

Peatland ACTION works to improve the condition of degraded bogs across Scotland



underscores the value of shared learning and adaptability while ensuring that restoration efforts are impactful and resilient in the face of climate crisis.

A call to action

The upcoming consultation on Scotland's Peatland Standard represents a key opportunity for stakeholders to shape the future of peatland restoration in Scotland. By participating, you can help refine Scotland's Peatland Standard and ensure it meets the needs of all those working to protect and restore these important ecosystems.

Peatland restoration is essential to Scotland's response to the climate and biodiversity crises. Scotland's Peatland Standard provides a clear, actionable framework for restoring peatlands effectively and sustainably while safeguarding sensitive and protected habitats. By adopting Scotland's Peatland Standard, Scotland will continue to lead the way in peatland restoration on the international stage.

Look out for the consultation later in 2025, and visit nature.scot/peatlandaction for updates and further information

Peatland ACTION is a national programme to restore damaged peatlands across Scotland, with £250m in funding from the Scottish government to restore 250,000 hectares by 2030. Peatland ACTION provides funding, support and advice to deliver on-the-ground peatland restoration and works collaboratively with others on peatland research, skills building and evidence-based guidance.





MATERIAL GAINS

Rick Gould examines some wheely good ideas for decarbonising the bicycle frame

As a low-carbon option for transport in urban areas, bicycles are synonymous with sustainability. Now, bicycle manufacturers are turning their attention to sustainability, and the pioneers in this field have unearthed a few surprises. Here, we look at the four materials most widely used for bicycle frames – steel, aluminium, titanium and carbon fibre (CF).

Ninety years ago, engineers from Reynolds Technology in Birmingham, England, developed a revolutionary, light, strong, aerospace-grade, seamless steel-alloy tubing known as 531, reflecting the proportions of the elements manganese, carbon and molybdenum in the steel alloy. Bicycle frames made from steel alloys dominated cycling until the 1990s, when large-scale manufacturers largely switched to aluminium frames because they were less expensive to produce than steel.

This century, there has been a rapid growth in frames made from CF, which consists of woven threads of carbon

material moulded and bonded using resins that harden. The characteristics of a bicycle frame depend on its shape and the materials used within it.

Engineers and frame-builders can create a frame that is light and strong using any of the four main materials, and each material has its advantages and disadvantages. Steel and titanium alloys, for example, are as versatile as they are robust and resilient, and can generate a frame for any purpose, whether for sport, commuting, recreation or hauling cargo. Aluminium is almost as versatile. The lightest frames are made from aluminium and CF, with no material matching CF for its strength-to-weight ratio and mouldability. Therefore, elite-level and professional racing cyclists typically use CF frames.

Mission emissions

Manufacturing bicycle frames has environmental impacts. So manufacturers such as Reynolds are looking at how to reduce impacts. Trek Bikes, based in the

US, first looked at its carbon emissions for making bicycles in 2021, finding that CF frames had by far the highest footprint, and recycled steel the lowest. Starling Cycles in the UK, which makes bespoke steel bicycles using Reynolds tubing, found comparable results in its own investigations, with a CF frame having a carbon footprint up to 16 times that of a steel-alloy frame.

The biggest surprise for Trek Bikes was that it was using aluminium with a high carbon footprint, so it worked with its suppliers to change this. From this year, the company will use low-emission aluminium in all its products, which will reduce the embedded carbon in frames by 80% and make a huge contribution to lowering its scope 3 emissions.

So what encouraged Reynolds to look into its emissions? “One of our customers, Starling Cycles, asked us about it, so we decided to investigate,” explains Martin Shepherd, general manager at Reynolds Technology.

Reynolds worked with the Warwick Manufacturing Group at the University of

Warwick. “They have an SME engagement team, and some of what they are doing is helping with environmental impact reports and greening the supply chain,” says Shepherd. “Our investigation is cradle-to-factory gate, mainly because we felt that was all of the chain that was in our control. We choose the steel and titanium mills we work with, the way we heat our factory, what light bulbs we use and how we get to trade shows,” he says. “We felt it covered everything we could control.”

Reynolds makes alloy frame tubing from steel, titanium and aluminium, and the investigation looked at the first two metal alloys. The report confirmed that all the steel in their tubing is recycled, but like the few other manufacturers that have published emissions reports, noted how much freight and travel emissions contributed.

“The report has provided us with a conscience. We are mindful of emissions with every decision we make,” says Shepherd. “As travel and air freight were significant contributors to emissions, the company has changed the way it works and, as well as reducing travel, especially by air, is now working with customers to use sea and land transport.”

Such emissions reports have also shown that even similar alloys, as Trek found, can have big variations in their carbon footprints, depending on where and how they are manufactured.

Test your metal

Metals such as steel, aluminium and titanium, thanks to their chemical properties, can be recycled indefinitely. According to the Bureau of International Recycling, at least 85% of scrap steel is recycled globally, with industrialised nations recycling far more. Aluminium is similar, with many countries having recycling rates near to 100%. Moreover, recycling metals has numerous environmental and economic benefits. Titanium is similar, although published investigations to date show that its carbon footprint is higher than aluminium and steel, but much lower than CF. So why are environmental impacts higher for CF frames?

CF appears to be a wonder material because of its strength, lightness and manufacturing flexibility. Its top three

“Most frames have travelled thousands of kilometres before the first pedal stroke”

uses are in wind-turbine blades, aircraft and sports equipment. For example, using CF in aircraft wings can reduce fuel use by 5%. However, the process of making CF is energy-intensive.

CF bicycle frames have also yet to prove as versatile or as durable as metal-alloy frames, and CF itself has exceptionally low recycling rates – based on multiple sources, no more than 15%. Considering that uses of CF are projected to grow by at least 10% per year, recycling rates need to increase to meet demand, as well as reducing environmental impacts.

The international governing body for cycle sport, the Union Cycliste Internationale (UCI), is well aware of this paradox and is participating in the Carbon Fibre Circular Alliance, which aims to improve the environmental

performance of CF. The UCI has determined, for example, that 90% of CF frames end up in landfill. So, with the UCI, bicycle manufacturer SCOTT Sports SA has been participating in a demonstration project with the University of Bristol and UK company Lineat Composites to recycle CF frames. Lineat Composites has successfully converted used frames into unidirectional tapes of CF, which can be used in other products, such as skis. The recycled CF is not as strong as primary CF, but still sufficient for many products.

Meanwhile, another UK company, Hunt, which makes high-performance aluminium and CF bicycle wheels, has been working with a process developed for recycling the CF in windmill blades. This process uses an evolved resin that can be readily recycled when the product has reached the end of its life. The advantage of this process is that the original CF does not lose any of its strength.

Flying bikes

While bicycles are typically used for local transport, most frames have already travelled thousands of kilometres before the first pedal stroke. If there is one thing Shepherd of Reynolds would like to see, it is much more localisation. “Here in Birmingham in the 1960s and 70s, you could source everything you needed to make a bicycle. All within a Birmingham postcode. And on our doorstep we had Dawes Cycles, Sun and Hercules, as volume bike builders. There’s only us left.”



IN THE FRAME
The choice of metal is crucial in keeping down a bicycle's carbon footprint



RICK GOULD MIEMA CEnv is an environmental scientist and writer

A PALM OIL PROMISE?

The Roundtable on Sustainable Palm Oil is trialling a jurisdictional approach to certification. Can it overcome the limitations of conventional methods?

WORDS AND PHOTOGRAPHS: CATHERINE EARLY

As commodities go, it's fair to say that palm oil has an image problem. The industry continues to cause deforestation, biodiversity loss and human rights issues, particularly in Malaysia and Indonesia, where most of the crops are grown. But could a new approach by the Roundtable on Sustainable Palm Oil (RSPO) change that?

The RSPO standard includes rules to prevent environmental damage such as the clearing of ecologically valuable forest areas for palm oil cultivation, to reduce the use of chemicals, for responsible waste management, and to improve human rights and worker conditions.

In the conventional certification process, it is the palm oil mill and its supply base that are certified. In the jurisdictional approach, certification of the production and processing of palm oil products is scaled up to the jurisdictional level, and supported by government policies and laws that are consistent with the RSPO standard.

The jurisdictional approach is agreed through a multi-stakeholder process, which includes government, growers, communities and non-governmental organisations. The idea is to overcome some of the limitations of the conventional approach in terms of improving or removing the environmental and social impacts of palm oil.

Dr Jen Lucey from the University of Oxford's Smith School of Enterprise and Environment led a research project on the impacts of RSPO palm oil certification on livelihoods and biodiversity. She believes the jurisdictional approach can address



Many products sold around the world contain palm oil

problems that are difficult to tackle at the level of an individual plantation.

She says: "So many environmental impacts happen at much larger scales than just the plantation – you can do your best to protect orangutans by setting aside land on your plantation, but it won't support an orangutan population if deforestation is going on all around you."

There are also logistical considerations, for example with responsible waste management and chemical disposal, for which there are strict requirements under RSPO certification, but infrastructure is often lacking. Having a whole jurisdiction involved makes it much easier to make sure the right facilities are in place, she says.

Francisco Naranjo, RSPO technical director, says there are benefits for smallholder farmers too, who grow around 40% of palm oil globally. "Having the government on board is extremely beneficial, because there are some gaps in the legal framework that only they can fix," he says.

He cites the example of the need for smallholders to prove legal ownership of

the land they are growing on, which is a requirement of certification, but is difficult to obtain in some countries.

Pilot projects

The RSPO is trialling the jurisdictional approach in Sabah, a state in Malaysian Borneo; the district of Seruyan, Kalimantan, in Indonesia, at the sub-national level; and Ecuador at the national level. Edo State in Nigeria and the Thai province of Surat Thani are considering participating.

The RSPO is developing a specific certification system document for jurisdictions, says Naranjo. It is managing the trials, encouraging them to share learning throughout the process.

Progress with the trials has been slow. In 2023, Sabah put regulations in place to support state-wide certification, the first of three steps. Ecuador achieved the first step at the end of 2024, having begun the process in 2016.

This is one drawback of the approach, and is inherent in having so many actors involved across a whole jurisdiction, according to Lucey. "They will all have different motivations, requirements and commitments to the cause, and competing political, economic and social needs. What's better at a jurisdictional level is not necessarily better for the individual or the local level," she notes.

Speaking on a panel at the RSPO's annual conference in November, Ruth Salvador, manager of the North Amazon landscape for Conservation International (CI), which is leading on the Ecuadorian trial, said that involving a whole group of stakeholders was slow, but should be



Palm oil offers a far greater yield at a lower cost of production than other vegetable oils

more effective in the long term. She says: "There have been a lot of lessons learned. But I believe that steps two and three will be much quicker – we have our boots on the ground now. Having the government at the same table as the private sector and organisations such as CI and WWF, and aligning the local vision with international standards, is unique."

The RSPO pilot is being tied to national targets, such as to reduce greenhouse gas emissions by 20%-25% by 2030. The CI trial has negotiated with local mills that buy from small producers of palm oil to pay a price premium to support them to achieve RSPO certification. It has also obtained agreement from local governments to encourage sustainable agricultural production, she says.

"This educates producers that there is a business piece behind switching production to be deforestation-free," she says. The first group of producers in the country have now been certified to the RSPO's standard, she adds. But to achieve scale, policymakers need to introduce financial incentives that allow growers to see economic changes in the longer term.

Compensation and audits

Panellists agreed that buyers and brands also have a responsibility to ensure that smallholders are adequately compensated for the extra work involved in becoming certified. Sander van den Ende, group director of sustainability at palm oil producer SIPEF, said that it was better in the long run for brands to buy physical bunches of palm oil rather than just certified credits, so that premiums could be passed on to smallholders.

Supply chains



Palm oil plantations are a major driver of deforestation



The fruit of palm oil trees, used to make the popular oil

Another thorny issue for the jurisdictional approach is how to ensure that an entire landscape is rigorously audited, given the actors' different levels of compliance and capacity to comply. To achieve step two of the jurisdictional approach, trials must establish internal control systems setting out how the jurisdiction will monitor and manage all the palm oil growers and mills, which will be verified by the RSPO, including checking that the jurisdiction has enough manpower.

A jurisdictional certification will be similar to those covering large groups of smallholders, Naranjo says. The RSPO has experience in certifying such bodies, such as one in Africa that has 5,000 members. "It's not easy, but something we need to ensure that the internal control system is strong enough to be able to make claims to the market with confidence," he adds.

In Sabah, those involved in the RSPO's trial have set up working groups to develop internal control systems for all the issues covered by RSPO certification. "We need to start small, and work that up

to a bigger scale," said Nazlan Mohamad, sustainability manager at Sawit Kinabalu Group, the Malaysian government's palm oil investment arm.

Dealing with leakage

It is too early to judge whether the jurisdictional approach will be able to solve sustainability issues faced by conventional certification. Analysis of the Sabah pilot published in 2023 in the *Journal of Environmental Management* found that, despite differences in opinion from stakeholders over many aspects, most agreed that it would not achieve zero deforestation.

However, stopping the conversion of areas designated as high conservation value, high biodiversity and peatlands was deemed more achievable, and stakeholders felt that the approach could help protect the habitats of native biodiversity and ecosystem services. They also agreed that human wellbeing and plantation workers' welfare would be improved.

The study also raised questions about a jurisdictional approach for a single commodity. Cross-commodity deforestation would continue and so some concerned palm oil buyers might source less from Sabah because of other less-scrutinised commodities causing deforestation in the state.

A net-zero deforestation territory beyond a specific commodity chain might be more appropriate, it said. To achieve this, buyer countries should help states such as Sabah make sustainable commodities part of their agenda.

CATHERINE EARLY is a freelance journalist

Connect the dots

CLIMATE CHANGE AND WEALTH

In the first of our new series, **Sandy Trust, Adrien Bilal** and **Sarah Mukherjee MBE** explain how our response to climate change could affect living standards and GDP

The election of Donald Trump and a shift to the right in many European countries threatens to undermine the progress we have made in transitioning to a low-carbon economy in recent decades.

A loud minority of voices claim that the transition is too expensive and will burden ordinary people with unnecessary costs – a view that appears to be gaining traction.

The truth, however, is quite the opposite, with numerous studies highlighting how living standards and GDP will decline should we not ramp up efforts to mitigate and adapt to climate change now. Successfully communicating the benefits of the transition – and the consequences of inaction – will be critical to gaining public support for green policies and determining our future prosperity.

Below, we explore why climate change threatens GDP and living standards, what the impact could look like in practical terms, and how successful climate action could deliver higher wealth and wellbeing for all.

Setting the scene

Sandy Trust, former chair of the Institute and Faculty of Actuaries' Sustainability Board

Many of the things we rely on in society depend on natural systems: think freshwater, soil, a stable climate and so on. Pushing past planetary boundaries is a bit like over-spending – you might get by for a while but you'll gradually run out of road and the whole thing will come crashing down.

Climate change and nature risks, driven by human activity, are now a matter for human security, with populations already feeling the impact of fires, food system shocks, water insecurity, heat stress and infectious diseases. If left unchecked, mass mortality, involuntary mass migration, severe economic contraction and conflict become more likely.

Our risk trajectory is worrying, with catastrophic or extreme climate impacts likely or highly likely by 2050 – the combination of

high impact and high likelihood should ring a loud warning bell.

Projecting temperatures to justify these conclusions is easy to do. The current (12-month average) temperature warming is 1.5°C above pre-industrial levels in 2025, and the decadal rate of warming is 0.3°C. Assuming the rate of warming stays constant, we will see 2.1°C in 2045.

As we explain in our *Planetary Solvency* report, there are a range of factors that may increase warming further, including ongoing high emissions, loss of albedo (less reflectivity), decreases in aerosol cooling, wildfires, degradation of nature carbon sinks, ice melt and the fact that the Earth may be more sensitive to greenhouse gases than our central estimate. Thus 2.1°C is a reasonable lower limit for warming.

It is very unlikely that the rate of warming will decrease. In fact, it could quite feasibly increase further and in a non-linear way, particularly if accelerating climate tipping points are partially triggered – for example, the release of carbon dioxide from melting permafrost.

Depending on your assumption of how resilient GDP is to climate change, a wide range of damages is possible, between 30% to 80% of GDP at 3°C of warming –

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The election of Donald Trump threatens to undermine the progress we have made

Social sustainability

thus catastrophic or extreme impacts are possible.

Risks are interconnected; climate and nature impacts are likely to have societal consequences. But as in financial services, a catastrophic level of warming does not mean there will be an immediately catastrophic economic shock or mortality event. For example, today we are at around 1.5°C of warming – severe on the climate dimension, but impacts are still limited on the economic and mortality dimension. However, as climate and nature risks ratchet up, increasingly severe societal impacts become more likely.

Read *Planetary Solvency – Finding our Balance with Nature* at www.bit.ly/PlanetarySolvency

Decades of decline

Adrien Bilal, economist at Stanford University
Our working paper, *The Macroeconomic Impact of*

Climate Change, suggests that every degree of global warming above pre-industrial levels corresponds with a 25% decline in GDP – equivalent to the economic impact of the Great Depression.

If we experience a 3°C increase by the end of this century, we will be looking at lost GDP and living standards two to three times more severe than in the Great Depression. You might have in mind long lines of people waiting for jobs, but the analogy is a little more subtle in the sense that by 2100, we will not be 25%-50% poorer than we are today; we still expect some growth between now and then. Our numbers indicate that we would be twice as rich by 2100 without climate change than we would be in 2100 with climate change. Another way to think about it is that we would, on average, all be nearly 20% richer today absent of climate change, which represents 10 years of growth.

It's hard to picture, because there are very few instances in economic history where you see an abrupt 20%-50% decline in GDP per capita – these things typically happen over a much longer timescale.

An analogy you could use to see how climate change impacts growth is to compare various countries in Europe. In countries like

Italy growth has been on the slower end over the past 30 years, which means fewer improvements in purchasing power. By contrast, other countries such as the UK or Germany have had higher growth in living standards. Over the past 30 years, these differences add up to a gap of about 20% in living standards. Our study also looked at the economic effects of the warming associated with emitting just one tonne of carbon, and then added them up in dollar terms. That's how we came up with a present welfare loss and a social cost of carbon in excess of \$1,000 per tonne.

To put that into perspective, the price of carbon in the EU's Emissions Trading System is hovering below \$100 per tonne. Under the last US administration, the social cost of carbon to evaluate federal policies was around \$200 per tonne of carbon. These numbers are substantially below what we find. Where do our numbers come from? They are mostly due to extreme weather events that are linked to increases in global mean temperature. Some countries are expected to have more droughts, some are expected to have more tropical storms. On average, we found that the losses will be relatively uniform globally. This was a surprise because most previous work found that the effects of climate change varied between countries.

When we compared costs and benefits of climate action, such as subsidies to electric vehicles, decarbonising the power system, and so on, we found that it would be cost effective to decarbonise large swathes of energy use for large economies like the EU. Read *The Macroeconomic Impact of Climate Change* at www.bit.ly/NBER-macroeconomic-impact

A better choice



Sarah Mukherjee
MBE, IEMA CEO

We have to make the case now, more than ever, that sustainability makes sense economically, financially and practically for everyone in the future.

The low-carbon transition requires us to design new products, improve resource

efficiency, harness new technologies, and upskill and train workers, all of which will deliver quality jobs, boost GDP and living standards, transform the world of work, build resilient businesses and drive competitiveness in global markets.

More than 250,000 jobs have been created in the UK's transition so far, with the Climate Change Committee (CCC) estimating this could reach up to 725,000 by 2030 in sectors such as buildings retrofit, renewable energy generation and the manufacture of electric vehicles.

Meanwhile, the Skidmore review of net zero suggests a 2% boost to GDP when just considering the indirect effects, including higher economic activity, reduced fossil fuel imports, and cost

savings such as cheaper household bills. The wider societal benefits will be higher still, including the impact of cleaner air on people's health and relief for a National Health Service that is under enormous strain.

Looking globally, the World Resources Institute forecasts \$26trn in economic benefits by 2030 through bold climate action and more than 65 million new low-carbon jobs – equivalent to the UK and Egypt's combined workforce.

This opportunity is too good to miss, and more urgent than ever after the average global temperature exceeded 1.5°C above pre-industrial levels for the first time in 2024, which was the warmest year on record going back to 1850.

Grasping this once-in-a-generation opportunity will require public support for green policies, and it's down to organisations like IEMA to communicate the tangible benefits on offer and dispel myths around the costs of the transition.

We should also admit that, as a sector, we have not served some audiences very well in the past – particularly those who are absolutely crucial to the transition, such as electricians and welders – and we must ensure that voices from disadvantaged backgrounds and marginalised groups are included every step of the way to deliver a just transition for workers.

If climate change continues unabated, GDP, living standards and human health will decline, while events like the unseasonal wildfires that wreaked havoc across California in January will become increasingly common.

Imagine a prosperous economy and society characterised by high-paid quality jobs, where businesses and individuals consume only what they need, where the air we breathe is clean and our rivers are free from pollution, and where humans co-exist in harmony with nature.

This is the alternative on offer, and it is what IEMA will continue to strive towards as we help build a sustainable future.

Visit the Green Careers Hub at www.greencareershub.com

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The World Resources Institute forecasts \$26trn in economic benefits by 2030 through bold climate action



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Healthy disagreement

Can work conflict be conducted in a sustainable way? **Sara Hickman** reveals how to go about it

Work 'conflict'. That word has weight. At one end of the scale, 'conflict' may mean an uncomfortable conversation; at the other, it could mean outright dismissal. It doesn't connect easily to the idea of sustainability.

At some point, we will all have heard of near-legendary success attached to work conflict. Motivational speakers at industry conferences or entrepreneurs on podcast interviews discuss Steve Jobs and John Sculley at Apple or the leadership team at Netflix as examples of success through the lens of conflict. Listeners may be baffled or energised in equal measure.

The message appears to be: "Conflict will bring innovation and business success. Do not avoid it, head directly towards it and tough it out (but have HR on standby just in case)."

We see things differently. Those stories, although they may be true, can create an unhelpful mindset to resolving differences of opinion. It can drive unhealthy or incomplete decision-making.

Here's the problem. In conflict, most people have a simple reaction: attack or avoid (fight or flight). That can make any resulting conversation and its outcome less than optimal. If I'm contributing to a discussion while I am in a stress-response mode or making a decision simply to extricate myself from the discussion, it does not lead to high performance.

What's the alternative? When we work with decision-making groups and help people engage in healthy, productive, well-formed disagreement (not conflict), it leads to more sustainable outcomes, strategically and personally.

Better conversations lead to better results. But how do we move towards sustainable, well-formed disagreement?

The answer to that question begins with two important steps:

- **Step one:** Dispel the myths that are unsustainable
- **Step two:** Replace those myths with tangible (sustainable) actions.

Before we look at the myths, I challenge you to do one small thing right now.

Language matters when it comes to shaping culture, informing our

mindset and shifting perceptions, so we recommend replacing the word 'conflict' with 'disagreement'. This simple change is incredibly effective.

Dispelling myths

1. The myth of 'false harmony'

We often put an unsustainable level of energy into meetings and conversations to appear OK with discussions or decisions when in reality we are not. We waste effort in the performance of consensus and maintaining the veneer of harmony. Replace this myth with **structure**.

2. The myth that avoiding conflict means it doesn't happen

Here, we are just replacing conflict with something that appears easier but is equally unhelpful. The time and effort we put into skirting around topics means we are often sitting with time-wasting, unsustainable tension. Avoiding the conflict does not avoid the tension. Replace this myth with **discipline**.

3. The myth that disagreement will feel comfortable

How have we concluded that discussing a difference of opinion will be the same as socialising with friends? As Luvvie Ajayi Jones said in her TED Talk, "get

comfortable with feeling uncomfortable". Replace this myth with **skill**.

Why dispel the myths?

You don't have to; there is always a choice. We should recognise that for certain organisational cultures these myths can work and they can maintain the status quo.

In our experience, when decision-making groups hold on to these three myths, the following may occur:

- Critical conversations happen 'outside the room' and take longer to resolve or end in stalemate
- Meeting time is wasted and, inevitably, more meetings are needed, creating a pointless, frustrating cycle
- Topics are discussed at surface level and some decisions do not stick. We're continually looking for a consensus that never arrives.

At best, this is strategically frustrating; at worst, it is a risky mix of wasted resource and limited innovation.

On a personal level, we have finite resources of energy and motivation, and too much of this spent in frustration becomes unsustainable. It affects the quality of our lives.

Holding on to these myths can be strategically risky and personally

Health and wellbeing

unsustainable. Which brings us to our next step of replacing them with tangible, sustainable actions.

How to replace the myths

1. Shift your thinking

The place to start to change any group or organisational culture (beyond a series of hiring and firing) is to shift our thinking.

Simple changes can be the most helpful place to start. For example, our earlier suggestion to change the use of language from 'conflict' to 'disagreement' is an easy, tangible step.

When we work with decision-making groups, we help them identify and adopt language that helps the group and the individuals to shift their thinking. It's one of the important changes needed to apply our BRAVE Principles.

Most relevant here is the BRAVE Principle of 'Disagreement is not failure, disagreement is not dislike'. Change your language to shift your thinking so you can start to change your approach to disagreement.

2. Apply the BRAVE Pillars

Apply our three pillars to your meetings, conversations or any place where true discussion and collaboration is needed. Replace myths with the three pillars of structure, discipline and skill, as outlined in 'The three pillars in practice', left.

In summary

Can work conflict be conducted in a sustainable way? If false harmony, group-think and comfort are your goals, the answer is 'no'.

When we drop the expectation of comfort and embrace the art and joy of well-formed disagreement, it allows resilience, progress and innovation to happen.

Well-formed disagreement is the stronger, sustainable foundation for the future. The world is currently screaming at us to do something different and to do better. It's time we started listening and really talking to one another.

SARA HICKMAN is principal consultant and owner at **We Are BRAVE**
wearebrave.co.uk/brave-principles

THE THREE PILLARS IN PRACTICE

PILLAR 1: STRUCTURE

Turn 'false harmony' into clarity by checking that any initial 'OK' in a conversation is deep agreement. We are not talking about interrogating, quite the opposite. You need to add structure and regularly state that different opinions are welcome. Create a culture where people can speak up. Put value on diversity of input.

Potential outcome?

You will make real progress towards your goals.

PILLAR 2: DISCIPLINE

Turn the tension created by avoiding conflict into energy for well-formed disagreement. It requires having the discipline to both notice and acknowledge when a topic needs more time and attention. Create a culture where people are disciplined and will debate the idea not the person. Put value on the art of disagreement.

Potential outcome?

You will shape the best version of any idea.

PILLAR 3: SKILL

Turn discomfort into conviction by clearly stating the reality of any difficult situation and its resulting emotions. Acknowledging discomfort is often the first step to reducing the reaction. Create a culture where emotional regulation is a critical and expected skill within your teams. Put value on skilful and respectful discomfort.

Potential outcome?

You will have skilful and resilient teams.

HOT HOUSE

Amanda Williams investigates an overheating time-bomb with the lack of climate adaptation measures in place in UK housing

A government-commissioned report on the future heating and cooling needs of the UK housing stock shows that without an extensive programme of retrofit by the 2030s, most UK dwellings will fail current night-time overheating criteria, leaving residents vulnerable to heat-related risks, and highlighting that a more holistic approach to retrofit is needed.

Assessing the Future Heating and Cooling Needs of the UK Housing Stock, published in January, also found that while indoor overheating risk was widespread across the UK, some groups were particularly vulnerable because of underlying health, social, financial and built environment factors, exposing potentially serious inequalities in the impact of overheating on the population.

Overheating occurs when the indoor thermal environment presents conditions that exceed those acceptable for human thermal comfort (thermal discomfort) or may adversely affect human health (thermal stress).

Factors include how the building is designed and constructed, high outside temperatures, solar gains from the building fabric and windows, internal

heat gains, and poor removal of excess heat, as well as how the building is used. Overheating can cause discomfort, stress, poor sleep, poor productivity and health risks, including increased mortality.

A perfect storm

The UK Health Security Agency predicts that heat-related deaths in the UK will increase significantly in the coming decades. In 2022, a national emergency was declared following the first-ever red warning for extreme heat, and almost 3,000 heat-related deaths were recorded. Such deaths could increase to 4,000+ by the 2030s and 10,000+ by the 2050s.

The causes of this may be complex. A University of Loughborough paper, *Overheating in Buildings: Lessons from Research*, described a 'perfect storm' of interacting factors.

These include the changing climate, with hotter summers and heatwaves, urbanisation and urban heat islands, pressure to reduce construction costs, increasing land and property prices, an

ageing population, the technical ability to identify and quantify the problem, and a profound social and cultural lack of knowledge about handling excess heat.

It also highlighted that the drive for energy efficiency and decarbonisation may itself have contributed, as more efficient homes resulted in a reduction in the average heat loss of the housing stock, improved insulation standards, and reductions in unwanted air infiltration, but insufficient consideration has been given to summertime heat gains.

The following measures and standards seek to improve the modelling of overheating and address this challenge.

- In *TM52: The Limits of Thermal Comfort: Avoiding Overheating* (2013), the Chartered Institution of Building Services Engineers (CIBSE) provides a structured methodology for predicting overheating risk in new and refurbished non-domestic buildings, using exceedance, severity and threshold tests.
- *TM59 Design Methodology for the Assessment of Overheating Risk in Homes* (2017) standardised the assessment methodology for homes and applied the same exceedance criteria from *TM52* along with a threshold for bedrooms.
- BREEAM 2018 HEA 04 provides up to three credits for thermal modelling (one credit), design for future thermal comfort (one credit) and thermal zoning and controls (one credit).
- The Good Homes Alliance developed a checklist tool and guidance for identifying and mitigating early-stage overheating risks in new homes.
- There are location-specific policies, guidance and standards, such as the *London Plan Policy 5.9 Overheating and Cooling* and CIBSE's *TM49 Design Summer Years for London*.
- There are further specific guidance standards for different contexts, such as schools (*Building Bulletin 101: Ventilation, Thermal Comfort and Indoor Air Quality 2018*) and healthcare premises (*Health Technical Memorandum 03-01*).

Overheating in homes can lead to discomfort, stress and even death

However, there is a sense that we do not yet have adequate plans to tackle this. Before the 2024 general election, the Environmental Audit Committee called on the then government to clarify how it planned to mitigate overheating in refurbished buildings, after a response to a committee report did not address this concern directly.

Mitigation measures

Part O of the UK's building regulations offers guidance on mitigating overheating in new residential buildings but does not apply to refurbishments. The committee advocated for an extension to Part O to cover refurbishments as the most effective and straightforward way to address this.

The committee highlighted that 4.6 million homes in England already experience overheating in summer, and, if global temperatures warm by 2°C, this could rise to 90% of all UK homes. It concluded that the social and economic case for accelerating heat adaptation measures was "clear-cut".

So, what must be done? There is no one-size-fits-all solution to modifying the UK housing stock to protect against overheating and reduce inequalities in heating or cooling needs. Diverse building construction ages, typologies and household characteristics make a blanket approach to meeting climate change adaptation and mitigation targets unsuitable. However, overheating mitigation measures must be implemented before the 2030s, especially in the most overheating-prone dwellings.

Limiting and controlling overheating requires a tailored approach, but key measures include reducing solar gain, aiding natural ventilation, looking at how the structural mass is storing and liberating heat, minimising internal gains, effective insulation to services, and addressing occupier behaviour

"There is no one-size-fits-all solution to ... protect against overheating"

Planning and housing

through training and awareness about how the building works and how to manage the internal environment.

The government's report says that one of the most effective low-cost strategies in reducing overheating risk and associated cooling demand is to install external shutters.

We already face a huge retrofit challenge to reduce the carbon impact of our existing building stock, and the Chartered Institute of Building (CIOB) has long called on government to adopt a UK national retrofit strategy to set out how this transition will be achieved.

This is a key area of work for the CIOB policy team, who have made the case for using VAT changes to encourage retrofit over demolition, advocated for a 'help to fix' scheme that would provide an interest-free government loan to cover homeowner costs of improvements, and have proposed the deferral of stamp duty on properties that have been purchased with the sole purpose of refurbishment.

Without an extensive programme of retrofit, we are sitting on an overheating time-bomb, and a more holistic approach to retrofit is needed to address this.

As the CIOB's *Retrofit of Buildings* technical information sheet makes clear, there will be a range of considerations for any retrofit project, but reducing the risks of overheating should always be a requirement, and all means of minimising summer overheating should be explored.

Other measures such as increasing green spaces in urban areas (parks, urban forests and green roofs) can, of course, also have significant cooling effects as well as providing additional benefits for human wellbeing, air quality and biodiversity. This underlines the importance of a joined-up approach to addressing issues that are so often interconnected and yet too often addressed in isolation.

It remains to be seen how the current government will address this challenge, but its study must provide impetus to inform the development of home energy efficiency and climate adaptation policies, and incorporating a more holistic approach must surely be a top priority.

AMANDA WILLIAMS FIEMA CENV is head of environmental sustainability at the CIOB

'I'm committed to becoming a top ESG specialist, continuously learning and applying best practice'

Gabriel LF Baraldi, ESG analyst, Inspired PLC

What has motivated you to become an environment and sustainability professional?

When I was the president of my college's student union, I introduced reusable coffee cups and wooden cutlery, and convinced the board to embed sustainability into their strategy. That sense of achievement made me realise sustainability was my purpose.

What is your educational background, and how has it prepared you for your career?

I studied environmental management with business, which gave me a strong foundation in both sustainability and corporate strategy. An environmental, social and governance (ESG) placement at Mott MacDonald provided hands-on experience and essential skills.

What does your current role involve?

I help clients navigate sustainability and ESG initiatives, including ESG reporting aligned with various frameworks, carbon accounting and net-zero strategies.

Are there skills you're currently learning or would like to learn to support your career goals?

I was awarded a scholarship from Santander and Cambridge Judge Business School for the Skills for the

Gabriel Baraldi aspires to a leadership role

Green Transition course. I aim to deepen my expertise in sustainable finance to drive meaningful change.

How do you see your role progressing over the next few years?

With ESG regulations evolving, frameworks like the Corporate Sustainability Reporting Directive and the Taskforce on Nature-related Financial Disclosures will be central to my work. I thrive in leadership roles having been student union president at Bournemouth and Poole College and president of the University of Southampton's Environmental Science Society. I'm eager to take on more responsibility.

What's the best and hardest part of your job?

The best part is identifying gaps in ESG initiatives and delivering solutions that drive real impact. I also love client-facing work. The challenge? There's so much exciting work happening, which I would like to be directly involved in.

What skills or strengths do you feel have helped you the most in your career so far?

My background in sales from the age of 15 has given me strong communication and client management skills.

Additionally, as the main ESG report designer in my team, my previous marketing

experience has equipped me with the capabilities to deliver strong branding with comprehensive reports.



Where would you like to be in five years' time?

I'm committed to becoming a top ESG specialist, continuously learning and applying best practice. I also want to take on a leadership role, using my experience to drive real change.

If you had to describe yourself in three words, what would they be?

Ambitious. Dedicated. Creative. And, green – not just in the sustainability sense, but because I wear it most of the time!

Who inspires you in your professional life?

Those who see their work as more than a job – a vehicle for real change. These people are passionate, driven and not afraid to chase greatness.

What would be your personal motto?

Be relentless in your pursuit of greatness.

If you could go back in history, who would you like to meet?

My journey in sustainability has been guided by purpose and faith, so I'd love to meet Jesus Christ. His influence has shaped both our world and my own path in unexpected ways.

GET IN TOUCH

If you would like to contribute a member profile, contact: s.maguire@iema.net

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Speedy Hire is an IEMA corporate partner operating in the UK construction, industrial, utilities and facilities markets. It looked in-house for staff to drive its strategy to reduce environmental impacts, improve social responsibility and strengthen governance.

Watch the video to see how it upskilled its staff:

● www.bit.ly/SpeedyHire-upskilling

Member stories in transport, logistics and supply chains

Mat Owen started out as a warehouse operative for FreshLinc before becoming supervisor, and later warehouse manager. Read about his recent career move to group manager, technical and sustainability.

● www.bit.ly/MatOwen

Emma Pye has more than 23 years' experience in the environment and sustainability sector, and a vast knowledge of the UK's highways. Read how she took the daunting decision to start her own sustainable business.

● www.bit.ly/EmmaPye



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“ If you think it doesn't make a difference to switch from Biden supporting clear action on climate change, to Donald Trump saying... 'drill baby drill'...you really are living in delusional land. It is a major setback ”



LORD ADAIR TURNER

Member of the House
of Lords of the
United Kingdom

SEASON 2

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Maria Z Benjamin

Co-founder and manager of Dodgson Wood

On how farm diversification can make the most of a business in an ethical and sustainable way



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