

TRANSFORM

Environment ●
Economy ●
Society ●

FOR ENVIRONMENT AND SUSTAINABILITY PROFESSIONALS

Dec/Jan 2020/21
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The complexity of biodiversity

Understanding interrelationships,
perspectives, and boundaries

PLUS

First aid Danny Sriskandarajah on the purpose of strong civic institutions

Pale imitations Why are the world's coral reefs declining?

State of balance A philosophical dimension to our ecological crisis

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to sustainability



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DEC/JAN 2020/21

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IEMA is the professional body for everyone working in environment and sustainability. We provide resources and tools, research and knowledge sharing along with high quality formal training and qualifications to meet the real-world needs of our members. We believe that together we're positively changing attitudes to sustainability as a progressive force for good. Together we're transforming the world to sustainability.

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SARAH MUKHERJEE, CEO, IEMA

Different perspectives

Hello, and welcome to the final edition of *Transform* for 2020, and the first of 2021!

By any standards, 2020 has been a tumultuous year – one that many people will be happy to see the back of. The emergence of COVID-19 as a global pandemic disease, causing a human and economic catastrophe; the race to produce not one, but three vaccines at a speed few would have thought possible even a few months ago; a change of leadership in the US and a president-elect committed to addressing climate change – this year has shown the best and worst of what humanity has to deal with.

Perhaps for this reason, this edition of the magazine is a contemplative one, tackling some major philosophical issues. Is it possible, for example, to produce climate change solutions through pure market mechanisms? We speak to a group of thought leaders and activists who believe it is (p18). Elsewhere, other environmental and sustainability leaders suggest there should be more room for conversations around the spiritual and value-driven aspects of combatting climate change (p28).

Our interview this month is with Danny Sriskandarajah, chief executive of Oxfam GB (p12). He does not shirk from the challenges caused by earlier staff misconduct scandals, and speaks powerfully about climate justice and inequality.

Wherever you are in the world, this time of year is one when thoughts turn to gathering with family and friends. For some of us this year, this will be impossible; for others, it will be a much-reduced celebration. However, thanks to science and human ingenuity, there is the prospect of a return to normal life in the foreseeable future. May I take this opportunity to wish all IEMA members and their families a very merry Christmas, if you celebrate it, and a peaceful and prosperous New Year.

“Thanks to science and human ingenuity, there is the prospect of a return to normal life in the foreseeable future”



POLICY

Biden presidency could slash US emissions by 54%

Joe Biden's climate pledges could see US carbon emissions cut by 38%-54% below 2005 levels by the end of this decade. This is according to a recent report from non-profit Climate Analytics, which models the possible range of climate ambitions that a Biden administration could table.

The president-elect has unveiled a \$2trn package to slash emissions through energy efficiency upgrades on 4m buildings over the next four years, charting "an irreversible path" to net-zero by 2050. However, his plans for a carbon-neutral energy system by 2035 represent the most significant contribution, according to the latest report. They could also create millions of new jobs.

Biden is also expected to deposit a new Nationally Determined Contribution (NDC) during the second half of 2021, after promising to start the process of rejoining the Paris Agreement on the first day of his administration.

"President-elect Biden's victory is clearly a massive shot in the arm for the international fight against climate change," said Kevin Rudd, president of the Asia Society Policy Institute, which co-produced the report. "An early demonstration of his determination will be the development of an ambitious and far-reaching NDC in the lead-up to COP26, especially one which provides the US a

strong arrow in its diplomatic quiver for encouraging other major emitters to also raise their short-term ambition."

Biden's plans are in contrast to the actions of president Donald Trump, who has called climate change a "hoax" and rolled back environmental regulations on oil and gas production. However, Biden may have to issue executive orders if he fails to agree legislation with the Senate, and these could be open to legal challenges. The Supreme Court would rule on any litigation, and the court's strong conservative majority may present a significant problem.

Nevertheless, scientific analysis by Climate Action Tracker shows that Biden's 2050 net-zero emissions pledge could shave up to 0.14°C off global warming by the end of the century. When coupled with China's pledge to bring emissions to net-zero before 2060, and the EU, Japan and South Korea's 2050 commitments, the researchers claim that limiting global temperature rises to 1.5°C above pre-industrial levels may now be within reach.

"These commitments are very close, if not within, 1.5°C-consistent pathways for this set of countries, and for the first time ever, put the Paris Agreement's 1.5°C limit within striking distance," said Bill Hare, CEO of Climate Analytics.

Read the full Climate Analytics report at bit.ly/3qdLGW6



TRANSPORT

China's switch to electric vehicles will 'end oil era'

The world's reliance on oil is coming to an end as emerging markets such as China replace petrol and diesel motors with electric vehicles (EVs), analysis by Carbon Tracker suggests.

The financial think tank's study found that transport in emerging markets accounts for more than 80% of all expected growth in oil demand up to 2030. However, the massive deployment of EVs in developing economies, led by China, is forecast to cut expected growth in global demand by 70%.

Annual savings would be more than US\$80bn in China and US\$35bn in India, according to the study – more than enough to pay for infrastructure

needed to support electrified transport. Moreover, battery prices have fallen by 20% since 2010, and are expected to fall to below US\$100/KWh during the next few years, which will make EVs as cheap as conventional vehicles. When combined with the war on plastic, the researchers said it is likely that global oil demand reached its peak last year.

"Emerging market importers will bring the oil era to an end," explained Kingsmill Bond, energy strategist at Carbon Tracker. "This is a simple choice between growing dependency on what has been expensive oil produced by a foreign cartel, or domestic electricity produced by renewable sources whose prices fall over time."

FINANCE

European Investment Bank to become 'climate bank'

The European Investment Bank (EIB) will spend €1trn on green projects during the next decade as it aims to become the EU's 'climate bank' and align all its work with the Paris Agreement.

In a new 'Climate Bank Roadmap', the EIB also revealed that, by 2025, at least 50% of its budget will be for financing climate action and environmental sustainability – up from around 30% today. Moreover, it will build on its commitment to stop supporting fossil fuel energy projects, maintain leadership in capital markets, and increase finance for climate change adaptation across the world.

The roadmap also includes a social element, promising more resources for a 'just transition' through training, jobs and advisory services for people whose livelihoods are threatened by the transition to low-carbon economies. This comes after the European Commission last year unveiled plans for a 'green deal' that will see Europe become the world's first carbon-neutral continent by 2050.

"We're transforming the way we do business," said Stephen O'Driscoll, head of the environment, climate and social office at the EIB. "It's a DNA change at the bank, where we accelerate the transition through green finance and pull out all the stops to make the European Green Deal a success."



BUSINESSWATCH



EP100 members save 1bn tons of carbon

Global business members of the EP100 initiative have saved 1bn tonnes of CO₂ purely through smart energy efficiency measures. The members, which include H&M and RBS, also revealed that they had avoided 360m metric tons of CO₂ during the past 12 months – comparable to taking 77m cars off the road for a year.

"Time and time again, energy efficiency has proven to be the most effective tool we have to quickly cut emissions," said Clay Nesler, interim president of the Alliance to Save Energy.

🔗 bit.ly/3IMmjYS



Unilever unveils 'Future Foods' strategy

Unilever will aim to generate €1bn of sales from plant-based meat and dairy alternatives by 2025, while halving its food waste, as part of its 'Future Foods' strategy. It has also pledged to double the number of its products delivering positive nutrition globally during the next five years, and to continue lowering calorie, salt and sugar levels.

"These are bold, stretching targets which demonstrate our commitment to being a force for good," said Hanneke Faber, president of Unilever's Foods & Refreshment Division.

🔗 bit.ly/36KGoZb



KPMG announces 2030 net-zero target

KPMG intends to reach net-zero carbon by 2030, while providing climate solutions for member firms and clients across the world. Its plans include a 1.5°C science-based target, which will focus on achieving a 50% reduction to its direct and indirect greenhouse gas emissions.

"Our carbon reduction plan will aid not only our own progress towards reducing the effects of the climate on tomorrow's world, but it will also contribute to our clients' efforts to reduce their end-to-end carbon footprint," said Bill Thomas, CEO of KPMG International.

🔗 bit.ly/3pHM5zR

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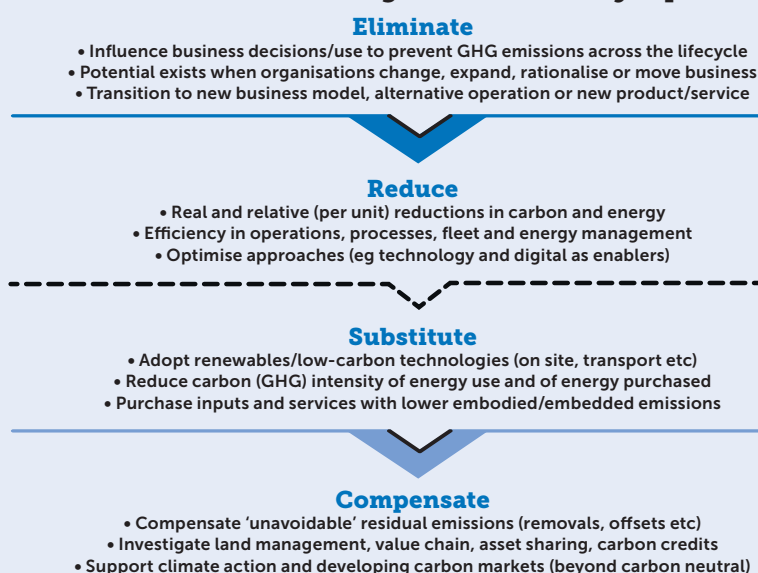
EMISSIONS

GHG Management Hierarchy updated for net-zero

In December, IEMA published an update to its widely used GHG Management Hierarchy. The Hierarchy was first published in 2009, with a focus on tackling significant and 'at-source' carbon emissions and avoiding jumping straight to a carbon offset solution. The updated hierarchy and briefing paper maintains this focus, but also recognises that the climate emergency now requires an escalation of action (across all hierarchy levels and varying with context).

The briefing includes new diagrams and descriptions, and considers the use of ambitious targets such as net-zero. Approaches, information sources and principles for practice are outlined. Informed by direct practice review and complementing a range of wider developments, the 2020 briefing and Hierarchy update is available now to support net-zero transition planning.

IEMA Greenhouse Gas Management Hierarchy (updated 2020)



Updated from original IEMA GHG Management Hierarchy, first published in 2009

REGION SPOTLIGHT

North West group takes activities online

By A Scully, Chair, IEMA North West

The IEMA North West Regional Group is a group of volunteers from a range of different disciplines that helps to deliver IEMA's key aims and support membership development in line with the sustainability skills map. During Q4 2020, we delivered three webinars across different topics.

Moving activities online presented a challenge, but by working closely with IEMA and having dedicated teams from the regional group help deliver webinars, we were able to deliver informative events. Each was hosted by a North West group



representative, with additional group members present to support delivery. We have been able to reach a much wider audience, with the three webinars having had more than 450 bookings.

Shirley Parsons and IEMA Futures hosted a webinar on Career Guidance and Development in the Sustainability Sector, which covered the importance of CPD and the sustainability skills map. A webinar on Achieving Zero Carbon in the North West involved case studies and speakers from the Growth Company: Crystal Doors and the North West Ambulance Service NHS Trust.

Finally, a webinar on Flood Resilience, with a focus on the North West, included speakers from the Environment Agency, The Flood Hub, Arcadis, and Stormwater Shepherds.

Feedback has been encouraging, with comments including: "A wide variety of speakers with different expertise, lots of practical suggestions" and "Lots of interesting points made and very encouraging to see both public and private sector making some great inroads in becoming net-zero".

Our aim is to provide resources for the membership that can be used for professional development. We are now planning our next webinars for Q1 2021. Topics we are working on include CPD, career resilience, environmental impact assessment, Brexit and legal obligations. If there is a topic you would like to see delivered, or you would like to help support our activities, contact regions@iema.net – it would be great to hear from you.



EVENT

A masterclass delivered – biodiversity net gain

As summer faded, ecologists returned home and IEMA hosted a masterclass on biodiversity net gain (BNG). The importance of BNG for biodiversity outcomes is now widely recognised, and demand for such an event was high. Delegates spanned a range of professional contexts covering impact assessment, development and construction, and were all looking for a more in-depth understanding of BNG policy and practice.

Sessions were led by Tom Butterworth of WSP and Julia Baker of Balfour Beatty – two of the UK's leading BNG professionals and authors of the BNG guidance jointly published by IEMA, the Construction Industry Research and Information Association, and the Chartered Institute of Ecology and Environmental Management.

The masterclass covered good practice principles, regulatory frameworks and real-life examples of BNG design and implementation on development projects. Thorny questions included BNG and linear projects, available protection for compensation sites, skills and capacity gaps, and variable approaches across local authorities.

The online masterclass approach is a new development for IEMA, providing closer engagement for a small group of professionals. This is an approach IEMA can explore further as we learn from the pandemic and look at new ways to **#BuildBackBetter**.

PUBLICATION

Raising awareness of health impact assessment

COVID-19 has brought human health and wellbeing into sharp focus. In particular, it has raised public awareness of the relationship between the built environment and health. Access to green space, air quality and the concept of 'place' have been highlighted as critical issues of public concern. However, health impact assessment (HIA) and the consideration of health in environmental impact assessment is not widely understood by those outside these fields.

In October, IEMA released its latest *Outlook Journal* on HIA and planning, seeking to highlight important current and emerging practices in embedding health considerations in the planning and impact assessment processes. The journal contains a guest article from Public Health England (PHE) as a result of IEMA's collaboration with PHE on a separate guide, *Health Impact Assessments in spatial planning*, launched for English local authorities in October. IEMA Impact Assessment Network members provided detailed feedback and assisted with the development of the PHE guide.

IEMA and PHE co-hosted a webinar on 12 November to provide an overview of both guides, and IEMA is planning further collaboration with PHE as part of the ongoing planning reforms in England in the coming months. To get further involved with our working group on HIA, email ia@iema.net. Download the latest *Outlook Journal* issue at bit.ly/334uk3R, and read *Health Impact Assessments in spatial planning* at bit.ly/391BVnu



PUBLICATION

The Value of Collaboration for Corporate Sustainability Outcomes

C OVID-19 is the defining global health crisis of our time, and has brought about collaborations between organisations to an extent, and at a pace, that would have been considered unachievable at the beginning of 2020. These accomplishments in the face of adversity show the need for environment and sustainability professionals to work together to resolve the sustainability challenges presented by climate change, resource concerns and other global issues. A Fellows roundtable revealed that some believed 'best in class' corporate sustainability can only be achieved based on meaningful outcomes or outputs that showcase actual sustainable transformations.

The IEMA Fellows Working Group on Collaboration for Corporate Sustainability was formed to develop a thought piece that would highlight the value of collaboration between organisations for corporate sustainability outcomes. This thought piece will outline member perspectives and recommendations for collaborative solutions at organisational level that can help achieve systemic change for corporate sustainability. These success stories should be read in parallel with IEMA's guidance on *Change Management for Sustainable Development* (bit.ly/2HnRPxk) and, mapped against the UN Sustainable Development Goals, should provide a roadmap for others and help resolve organisations' sustainability dilemmas.



The working group states: "At their heart, collaborations for sustainability should look to drive positive and systemic change, raising ambition and building from an ethical or at least a shared values underpinning. If prospective partners do not approach collaborations with such a foundation, then there will be a risk of failure or potentially even a negative impact. Similarly, organisations

embarking on their journey of transformative change may have limited resources and wish to avoid reinventing the wheel. In such instances, spending time and research prior to launching into an initiative will help to unveil any existing networks and collaborations that organisations can use and join."

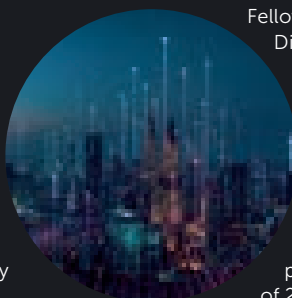
On 4 December, IEMA policy and engagement lead Marc Jourdan was joined by several representatives of this working group, including Andy Whyte of Ricoh Products UK, Geraldine Boylan of Mabbett and Louise Stevens of Innocent Drinks, to present the findings and case study insights of this thought piece in a webinar session. Read the event report and watch again at bit.ly/2VeuAsV

PUBLICATION

Smart living, decarbonisation and sustainability

Cities consume more than two-thirds of the world's energy and account for more than 70% of global CO₂ emissions – and the planet's urban population is growing, placing increasing pressures on natural resources. Researchers, entrepreneurs and businesses have responded by combining domain expertise, data sources, and machine learning and AI to better understand the science behind climate change, and to innovate across a variety of sectors to support smarter urban living.

Following its December 2019 *Thought Piece on Disruptive Technologies and Sustainability* (bit.ly/2UHtghO), the IEMA



Fellows Working Group on Disruptive Technologies and the Digital Economy is collaborating with experts from IEMA policy networks to take a closer look at the role of smart living in decarbonisation and sustainability. This document, scheduled for publication at the beginning of 2021, provides an opportunity to bring in further case studies

highlighting the specific role that new technologies and smart systems can play in areas such as infrastructure and waste, the energy sector, agriculture and transport. Should you wish to support this project or submit a case study proposal, please email Marc Jourdan at m.jourdan@iema.net

NEW REGULATIONS

THE LATEST

■ LEGISLATION ■ GUIDANCE ■ CONSULTATION



4 DECEMBER 2020

Waste

The Waste (Miscellaneous Amendments) (Scotland) Regulations 2020 make various amendments to update references to EU legislation, change the date on which landfill operators must refuse to accept biodegradable municipal waste and require taking into account good practices when separately collecting waste oils.

➤ cedr.ec/7bx



1 MAY 2021

Air quality

The Air Quality (Domestic Solid Fuels Standards) (England) Regulations 2020 place restrictions on the sale of wet wood for domestic burning and limits on the emission of sulphur and smoke from manufactured solid fuels. It also phases out the sale of traditional house coal.

➤ cedr.ec/7c5



2 NOVEMBER 2020

Planning

The Planning Act 2011 (Review) Regulations (Northern Ireland) 2020 set out terms of the review on how well the Planning Act (Northern Ireland) 2011 has met its objectives. This review was required three years after the Act had come into force, with subsequent reviews every five years.

➤ cedr.ec/7c6



30 OCTOBER 2020

Pollution Prevention

New Guidance for Pollution Prevention (GPP1) aims to provide general information on preventing pollution to ensure legal compliance, reduce costs and appropriately manage risks.

➤ cedr.ec/7bu



2 NOVEMBER 2020

Waste

Guidance has been produced by the Department of Agriculture, Environment and Rural Affairs on carrier bags charging legislation in Northern Ireland. The Single Use Carrier Bags Charge Regulations (Northern Ireland) 2013 have been in force since 8 April 2013, with a 20p levy now in place on all carrier bags.

➤ cedr.ec/7c1



14 OCTOBER 2020

Energy conservation

A now-closed consultation sought views on proposals to extend the Warm Home Discount Scheme from 2021 to 2022, along with some minor changes. The Warm Home Discount Regulations 2011 come to an end in March 2021. These proposals extend the scheme for one year.

➤ cedr.ec/7by



12 OCTOBER 2020

Plastic waste

The Scottish government is seeking views on the introduction of new legislation to restrict the sale or commercial supply of plastic plates, plastic straws, plastic cutlery, polystyrene food and drink containers, plastic balloon sticks and products made from oxo-degradable plastics.

➤ cedr.ec/7bz



3 NOVEMBER 2020

Fertilisers

Defra is consulting on three policy options that give the greatest ammonia emission reductions from regulating the use or sale of solid urea fertilisers. These include an outright ban, the use of urease inhibitors, or restrictions on spreading.

➤ cedr.ec/7c3

Skippy Industries was fined for stockpiling waste in the open without the relevant permit

INCOURT

IN COURT

Skip company fined £22,000 for illegal activity

The director of a Norfolk skip company has been ordered to pay £22,000 for operating an illegal waste site for more than a year.

Skippy Industries Ltd, based at Riverside Farm, Setchey, near King's Lynn, was only permitted to store and treat waste indoors, within a certain area. However, the Environment Agency found stockpiles of used refrigerators, soiled mattresses, rubble and other mixed waste outside in the open, where it risked contaminating the nearby River Nar Site of Special Scientific Interest.

Some specific low-risk activities were allowed outside, but Agency officers visited the site nine times between May 2018 and April 2019 and found waste piled up on land used by the company. Officers repeatedly offered advice and support, but the company failed to adhere to multiple deadlines and clear the waste.

Mr Lemmon admitted in an interview that he knew he needed an environmental permit

to lawfully extend the site, but claimed his company had outgrown its building and had become a "victim of its own success". He said that, as a result, he couldn't afford the permit.

Speaking after the hearing, Agency senior environment officer Scott Cunningham said: "It is our job to regulate waste activity to make sure it doesn't put people or the environment at risk. We always aim to work with and support business growth as long as it's compliant with the rules.

"We hope securing this criminal conviction of a waste operator serves as a wake-up call to other businesses and a reminder that they must stay within the conditions and boundaries outlined by their permits."

Mr Lemmon was fined £14,000 and ordered to pay £8,170 in costs and surcharges after pleading guilty to the charge in Norwich Magistrates' Court on 29 September 2020.



OTHER NEWS

Sewage providing information on coronavirus outbreaks

A government project is being used to detect traces of coronavirus in sewage. The programme has been operational since June and has proven that fragments of genetic material from the virus can be detected in wastewater. This can show where a local community or institution is experiencing a spike in cases.

The results can give local health professionals a clearer picture of infection rates by identifying where there are high numbers, allowing them to take early action to slow the spread of the virus. Data will be shared with NHS Test and Trace to flag up where new outbreaks may be occurring.

Testing is currently being used across more than 90 wastewater treatment sites in the UK, with plans to expand.

CASE LAW

Application for judicial review of badger culling decision refused

In *R (on the application of National Farmers Union) v Secretary of State for the Environment, Food and Rural Affairs*, the claimant applied for judicial review of the Secretary's direction to Natural England concerning badger culling.

A group of farmers had involved the second claimant company to apply for a badger culling licence to prevent bovine tuberculosis (bTB) spread within a Derbyshire cull zone. The first claimant trade union supported the company during the process.

Natural England was responsible for issuing badger disease control licences each year. In September 2019, the

Secretary directed Natural England, under the Natural Environment and Rural Communities Act 2006, not to grant any licences in Derbyshire before May 2020. She referred to badger vaccination projects within the county and the need to respond to the Godfray independent review of the bTB eradication strategy.

Natural England had been about to grant the company a licence as its zone fell within the top 10 areas identified for a licence, and it had shown it could deliver a cull in compliance with statutory guidance. The claimant submitted that the direction was an unlawful departure from

policy, frustrated its legitimate expectation about what matters would be taken into account and that it would obtain a licence if requirements were met, and was Wednesbury unreasonable.

In regards to whether it was an unlawful departure from policy, Parliament had decided that the Secretary should have the power to tell Natural England what to do, and nothing in the 2006 Act restricted the exercise of that power. Nothing in the guidance amounted to a promise that if the relevant area was in the top 10 and fulfilled requirements, a licence would be granted. The claimant also failed to demonstrate that the Secretary

had considered immaterial factors or had excluded material factors, therefore not satisfying the Wednesbury unreasonableness argument.

The judge concluded that the Secretary had made a political judgment with regard to the county's badger vaccination programme, anti-culling lobby and risk of fallout if a vaccinated badger was killed, and her conclusion had not been irrational. The application was refused.



Champion for change

Oxfam GB CEO **Danny Sriskandarajah** speaks to Kathryn Manning about the need for strong accountable civic institutions and brave ideas to counter COVID-19, social injustice and climate change



Danny Sriskandarajah is not a person to baulk at a challenge – or 10. He became CEO of Oxfam GB in January 2019, in the aftermath of a staff misconduct scandal in Haiti that threatened to spoil the 80-year-old charity's reputation. Two months later, Cyclone Idai – the southern hemisphere's worst-ever tropical cyclone – hit, highlighting the fact that Oxfam's humanitarian work is becoming inextricably linked with the climate crisis. This year, the COVID-19 pandemic has joined the fray.

Sriskandarajah's career has already taken him through a number of important civil society roles. After a masters and PhD in international development as a Rhodes Scholar at Oxford University, he became the youngest-ever person, and first non-Briton, to

lead the Royal Commonwealth Society as director general from 2009-2012. He was then secretary general of Civicus, a global alliance of civil society organisations.

Sriskandarajah's personal history goes some way to explaining what instilled his drive for activism: he was born in Sri Lanka and his parents left the country to pursue education – but didn't return because of its brutal 25-year civil war. He has always been aware that he escaped the fate of those left behind.

"I was conscious of what happens when inequality and discrimination wreak

"We try to relieve poverty and injustice, but we're also there to address the drivers of that – to change systems, to change policies"

havoc on a society, and also of the importance of individual political activism – citizens standing up and fighting for peace or reconciliation,” he says. He describes his political worldview as being influenced by his parents’ reading matter, “a mashup of *New Internationalist* and *National Geographic*.” He was also inspired by David Attenborough, although there was no terrestrial television in Papua New Guinea, where he spent part of his childhood. “I remember the excitement of getting *Life on Earth* on a bootleg VHS tape and watching it over and over again.”

We are speaking as a second lockdown has been announced in England, a vaccine has just been discovered, and the US presidential election is in its final hours; there is a feeling of possible global reset. “I think this is a moment in history where we need strong civic institutions,” Sriskandarajah says. “I don’t trust the state or markets to deliver a fair and more sustainable world. Time and again it’s been citizens coming together to drive progressive change, and this feels like one of those moments.”

Walking the talk

For Oxfam, a global organisation with a reach of more than 22.2 million people, resetting has been a learning process – one that has involved reflecting on its failings in Haiti. “It’s important that organisations working in international development, where there are huge imbalances of power, do what we can to minimise and address the abuse of power,” Sriskandarajah says. “My pitch for this job was, ‘I’m going to help you learn the lessons from the safeguarding scandal, but also reimagine what a large internationalist network like Oxfam can be for during the rest of the 21st century, and help you become a benefit-for-purpose organisation’.”

His work has included adapting Oxfam so that it plays a role in combatting climate change. The organisation’s humanitarian experience has been put to good use in connecting poverty and climate justice and putting



“Reducing poverty is going to be pointless unless we address climate breakdown”

both at the heart of its strategy. Sriskandarajah recalls being involved in the negotiations leading to the UN Sustainable Development Goals, watching as it became clear that poverty, inequality and sustainability are inextricably linked. “Reducing poverty is going to be pointless unless we address climate breakdown,” he says. “The link is about climate justice and inequality. Poverty exists not because of scarcity, but because of how resources are distributed.”

He also wants to ‘walk the talk’ on climate impact. Oxfam GB has targeted a two-thirds reduction in climate emissions by 2030 and net-zero carbon emissions by 2045, without offsetting. It has already reduced its emissions by 35%. “We are already trying to incorporate a climate lens into most of what we do,” he explains.

First aid

Oxfam GB is a member of a global alliance that operates in 90 countries, and this position has given it close-up experience of the damage that climate change can cause – as seen in

the recent devastation caused by Typhoon Goni, in the Philippines. “An organisation like ours, grounded in humanitarian experience and expertise, spends a lot of time not only delivering relief and aid, but also building back better, so farmers in climate-vulnerable bits of the planet are getting assistance and advice to be able to build more resilient livelihoods,” Sriskandarajah explains.

Oxfam also helps with climate adaptation; alongside its more traditional humanitarian work, such as providing clean water and responding to floods, it is working with partner organisations to replant mangrove swamps and help farmers adopt sustainable practices. However, a recent report from the charity showed that only 14% of global climate finance is going to the least developed nations – and just 2% to small island developing states that are being hit hardest by the climate crisis.

“We’ve been doing a lot of work on climate finance to highlight the contradictions, the hypocrisy and the inequities in the promises being made by world leaders, especially northern

Interview

✓ Oxfam's global reach has given it close-up experience of the devastation that climate change causes

governments," says Sriskandarajah. "It's a tragedy that so little goes to the poorest countries, especially small island developing states that have done the least to create the problem."

Oxfam is using its social and media networks to raise these issues, taking its large masks of leaders to events such as G7 meetings. "We've got Donald Trump and Boris Johnson and Angela Merkel. We're there because we want to catch the attention of our leaders and policymakers."

Another approach is related to Oxfam's own practice. In the UK, its Wastesaver programme recycles 12,000 tonnes of donated clothing a year, making it the country's biggest such recycler.

"1% of all clothing is thrown away every year," notes Sriskandarajah. "Part of the social enterprise is to be an ethical disposer of that clothing."

The organisation has launched successful campaigns such as Behind the Barcode, examining the ethics of retailers' practices, and Second Hand September, which challenges people not to buy any new clothes for the month. It also uses its retail network to talk about sustainable consumption. The aim is to change consumer behaviour, especially in the global north. "In the UK we each buy 26kg of new clothing every year – double that of the Italians or the Germans," says Sriskandarajah. "If ever there's a country addicted to fast fashion, this is it."

COVID-19 makes the issue more desperate. Oxfam estimates that more people will die of hunger this year than from the disease itself, as a result of the disruption it has caused. "In our globally interconnected supply chains, every time a clothing company cancels its orders in Bangladesh or Cambodia, those people are left unemployed and without a safety net," he explains.

"This is the greatest ever wake-up call to humanity about how deeply interconnected we are. No one is safe



until everyone is safe. That's what the pandemic reminds you."

Wholesale change

Sriskandarajah is inspired by Oxfam's early years. The charity was founded in 1942 by individuals raising resources to end famine, especially in Nazi-occupied Europe – but they also campaigned to the Churchill government. "To me, there's a dual role that organisations like ours serve," he says. "We try to relieve poverty and injustice, but we're also there to address the drivers of that – to change systems, to change policies."

Oxfam is still fulfilling that role, even providing a prophetic report on the \$11trn a year global value of unpaid care work in January 2020, two months before COVID-19 hit. Another example is its recent report showing that the carbon emissions of the world's richest 1% are more than double those of the poorest half of the world's population put

"It's important that organisations working in international development address the abuse of power"

together. "It's stark to see the parallels between wealth inequality and emissions inequality," says Sriskandarajah. "It's a worrying indictment of how the global economy has created vulgar levels of economic inequality and driven this climate injustice."

He would like to see an increase in wealth taxes and new carbon levies on luxury items. "Only 4% of all world taxes come from some form of wealth tax – yet we know that not only is a lot of that wealth born out of extraction, but also that inherited wealth is deepening inequality." He finds it "almost distressing" to see the huge profits being made by companies, "especially in the COVID-19 era, when so many businesses and people are struggling."

Oxfam has suggested a windfall tax on companies that have done well out of COVID-19, circulating the statistic that if Jeff Bezos gave every one of his 860,000 Amazon employees a US\$100,000 bonus, he'd still be richer than he was before the pandemic. "All power to Amazon in terms of its entrepreneurial spirit, but this is an opportunity for us to think about how shareholder capitalism works, and to create tax systems that give us a chance of creating a fairer economy and a greener world," says Sriskandarajah.

Once in a lifetime chance

Does Sriskandarajah feel that, under the pressures of COVID-19, it is falling to

civil society to do this work, rather than government and public services? "What I see happening now is that it is civil society's additional role to lead systemic change," he says. He thinks some of the best civic action is on divestment, such as the Divest Invest campaign in the US. Oxfam supports the Make your Money Matter campaign, which aims to convince pension funds to actively divest from companies that don't live up to the triple bottom line concept.

He is also attracted to the ideas found in Kate Raworth's book *Doughnut Economics* – the first draft of which was actually written while Raworth was

working at Oxfam. "Kate frames the fundamental shift needed in economic life, and the idea of a social floor and an environmental ceiling."

Sriskandarajah also believes it is time to change the shareholder-first, short-term capitalist model. "We need a regulatory environment involving new rules, with greater collaboration. This has to be the generation that delivers sustainable growth, a just transition or a Green New Deal. If historians aren't writing about this in the same way that they wrote about the New Deal or the Marshall Plan, it will have been a complete lost opportunity – a tragedy."

"I've never faced a reset opportunity as great as this"

He says it will come down to brave conversations, good allyship and the idea that "evil happens when good people stand by and do nothing. Certainly in my life, I've never faced a disruption as great as this, but I've also never faced a reset opportunity as great as this. What a tragedy for the human species if our generation of humans, which is waking up to the reality of economic inequality, climate breakdown and now COVID-19 impact, doesn't do something adequate to respond to these huge existential challenges faced by people and planet." 



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Bulk carbon offsetting by fossil fuels companies may look appealing, say **Quintin Rayer** and **Pete Walton**, but investors should be aware that it cannot solve global warming

Investors are aware of the climate risks associated with extracting and burning carbon, and can see that fossil fuel companies are a major source of emissions. So far, shareholder engagement and divestment have been the primary responses, but pressures to halt carbon-based fuel extraction are intensifying.

Policy and technology changes could cause extraction firms to lose US\$34trn of revenue, according to Barclays' 2015 report *Climate Change: Warming up for COP21*. Combined with changing investment policies, extraction firms may be unable to realise the value of their fossil reserves, making current market valuations misjudged. Some argue that fossil fuel assets are will become uncompetitive as the price of renewable energy drops – their market share fell from 29% of the S&P index in 1980 to 5.3% by 2019, according to the Institute for Energy Economics and Financial Analysis's 2019 report *Fossil Fuel Investments: Looking Backwards May Prove Costly to Investors in Today's Market*.

One response from fossil fuel firms has been to invest in carbon-offsetting measures. Royal Dutch Shell, for example, plans to spend US\$300m on reforestation. This sounds impressive, but climate-aware investors are cautious. Is this a real attempt to address problems, or is it about retaining societal legitimacy so that Shell can continue its activities?

What is carbon offsetting?

Carbon offsetting schemes absorb atmospheric CO₂ or reduce existing emissions. A firm may be unable to avoid emitting some CO₂, and offsetting can 'neutralise' this problem. However, schemes vary in quality, and it can be hard to estimate how much CO₂ is really removed. High quality projects avoid double counting offset volumes, and include verification and registration. Other issues include the permanence of storage for removed carbon, how benefits are counted, and the potential for a scheme to cause emissions elsewhere ('leakage').

Shell's investment forms part of its plans to reduce its net carbon footprint by 2%-3% over three years – which still leaves a huge amount of emissions to be tackled. There is also concern over whether it covers all scopes of emissions within Shell's activities. Scope 1 emissions are from sources directly owned and controlled by an organisation, such as fuel used by company vehicles. Scope 2 emissions are those that come from energy use, and Scope 3 covers all other indirect emissions,

including customers' use of oil and gas.

It thus makes no sense to extract oil and gas in a carbon-neutral manner. There is also little mention of whether the schemes are certified or meet minimum standards for being additional and permanent, and for avoiding double counting.

Half measures





US\$34trn

Policy and technology changes could cause extraction firms to lose **US\$34trn** of revenue



5.3%

Fossil fuel assets fell to **5.3%** of the S&P index by 2019

Problems with offsetting

Many climate scientists are wary of over-relying on offsetting. Tree planting may seem promising, but it can be challenging to estimate the amount of carbon absorbed. In addition, carbon capture must be permanent on a geological timescale, and the repository must be protected so that the carbon is not released. Leakage can also be a problem: for example, a project that avoids emissions caused by forest clearance might simply shift timber production and deforestation elsewhere.

Reforestation schemes also risk creating monocultures. The carbon stored in forests with low biodiversity is vulnerable to fire, diseases or pests. It is unlikely that humans can recreate the rich diversity of ancient forest ecosystems in just a few decades – it is far better to leave existing ecosystems in place.

As mentioned, double counting must also be avoided. The problem is that a project's carbon value could be counted towards purchased commercial offsets and as part of national Paris Agreement pledges.

Other gases, such as methane and nitrous oxide, must also be considered, but estimating the equivalent amount of climate warming is not straightforward. Given these difficulties, the risk is that offsetting may prove insufficient, even if carried out in good faith. For example, the altitude of CO₂ emissions plays an important role: for air travel, at least twice the emissions should be offset in order to compensate for the full climate impact.

If high volumes of carbon offsetting are required, capacity may be insufficient to meet demand. Consequences could include a shortfall, or the creation of substandard schemes. Bulk offsetting might also create the impression that everything is under control and businesses can carry on as usual. Widespread offsetting by fossil fuel companies would result in carbon being shifted from secure underground reserves, via the atmosphere, into vulnerable above-ground stores such as forests – significantly increasing climate risk.

These concerns indicate that it is wiser to adopt the precautionary principle and avoid emissions in the first place. Prevention is better than cure – particularly with the significant uncertainties involved and the appalling consequences of failure.

Offsetting guidelines

Given the challenges of reliable offsetting and the dangers of unchecked emissions, some guidelines emerge:

- First, reduce emissions as much as possible
- Thereafter, use offsetting to absorb residual emissions.

Other requirements include:

- Ensuring offsets are additional, and avoiding double-counting
- Offsetting by more than the estimated emissions (for air travel, offset at least double the emissions)
- Ensuring carbon removal is permanent (well above hundreds of years).

Offsetting may also be used as a practical measure to mitigate the worst effects of emissions while developing and implementing strategies to adopt lower-carbon technologies.

How should investors react?

Fossil fuel firms' attempts to offset carbon emissions are better than nothing, but fall short of climate requirements. Offsets do not 'solve' global warming, and fossil firms may only really be addressing stigma. Offsetting should only be used while firms act to reduce their emissions, and may help if used as a

temporary mitigating measure while society decarbonises.

Carbon offsetting should be seen as helpful, but no substitute for genuine moves towards low-carbon technologies. Ethical and sustainable investors should adopt robust policies to ensure fossil fuel companies understand this. By taking early action, ethical investors can show leadership and accrue client reputation. Advisors and fund selectors can identify proactive managers and guide clients accordingly.

The science is clear: to prevent dangerous climate change, we need rapid and decisive steps to reduce emissions. Media commentary shows that much of the public understands this message, even if the finance sector has been slower to adjust. Perhaps fund managers should listen – early movement could reap reputational benefits.

What do you think about offsetting programmes – are they a valuable tool in helping us reduce emissions, or a distraction from more effective methods?

DR QUINTIN RAYER is head of Research and Ethical Investing at P1 Investment Management.

DR PETE WALTON is a research fellow at the UK Climate Impacts Programme, University of Oxford.

“Bulk offsetting might create the impression that everything is under control and businesses can carry on as usual”

For some, it was a car crash interview that achieved the opposite of its intention. Speaking to the BBC's *HARDtalk* programme last year, Extinction Rebellion co-founder Roger Hallam claimed that six billion people will die this century from climate change. Claims like these are inspiring a new breed of campaigner – but not the one Hallam envisaged. Its mantra is market environmentalism.

A different approach

The British Conservation Alliance (BCA) is spearheading the call for a 'green market revolution'. Launched by a group in September 2019, the non-profit's mission is to promote free enterprise as the solution to the planet's challenges. It has published a 174-page manifesto (www.greenmarketrevolution.eco) calling for a green market revolution; 15 organisations from the free market and conservative lobby contributed to it.

"Very often, the debate around climate change is about political revolution," says BCA founder and director Christopher Barnard, currently policy director of sister organisation the American Conservation Coalition. "The founders of Extinction Rebellion are all about dissolving capitalism. This is not an environmental platform but a left-wing wishlist that uses climate change as a Trojan horse."

"Blocking roads and gluing yourself to transportation just makes it difficult for people to move around or get to work, and it turns them off. If this is what the environmental movement looks like, they don't want to be a part of it."

Green growth

The concept of market environmentalism has been around for more than 30 years. The modern reboot sees environmental debates as "dominated by heavy-handed, top-down solutions", according to the BCA. Besides taking offence at calls to overthrow capitalism to curb global warming,

Entering the fray

Market environmentalists want to change the narrative on climate change.

Huw Morris reports on an emerging voice

market environmentalists dispute that 'green new deals' are the only way to save the planet.

"Economic growth and environmental progress are not mutually exclusive," says Barnard. "It is possible to harness

both the power of the free market and the beauty of our environment to the benefit of everyone. Whereas environmental activism has historically shunned anyone on the pro-market side of the political spectrum, we want to champion market-based solutions to environmental problems, and to empower people to live more green-conscious lives.

"The problem with seeing a green new deal as a panacea is that it could create gridlock and stop other things happening. We need reforms,



but should not lose sight of low-hanging fruit. The worry with a big programme is that it ignores the small things that could be done in the meantime."

The concept is gaining momentum among free market organisations, including the Adam Smith Institute and the Centre for Policy Studies. Politicians are seeking briefings, and the manifesto has been downloaded in 91 countries.

"A lot of the environmental movement is instinctively in opposition to people who want to use markets to solve problems," says Matthew Lesh, head of research at the Adam Smith Institute. "They see markets as the root cause of all evil, rather than seeing them as a mechanism for tackling environmental challenges."

Human ingenuity

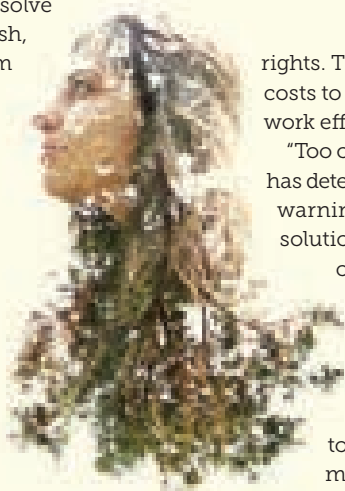
Market environmentalists also believe in innovation, property rights and local solutions. Barnard cites the work of psychologist Professor Steven Pinker, who says people are more likely to accept climate change when they are told it can be solved by innovation, rather than when they are given dire warnings.

Their shibboleths include carbon capture and storage, genetically modified food, lab-grown meat, electric cars, dissolving plastic and terraforming. Nobel Prize-winning scientist Norman Borlaug, who saved more than a billion people from starvation by developing technologies to increase agricultural yields, is a hero to many.

They are also unashamed supporters of nuclear energy. "More people have died in the US falling off the roof while installing a solar panel than from nuclear power in 60 years," says Barnard. "We need nuclear – you can't keep homes warm and hospitals running without it."

Market environmentalism accepts state involvement, but believes it should be kept to a minimum and confined to allocating and safeguarding property

"It is possible to harness both the power of the free market and the beauty of our environment to the benefit of everyone"



rights. This lowers transaction costs to enable markets to work efficiently, they argue.

"Too often, environmentalism has deteriorated into apocalyptic warnings that don't offer solutions," says Lesh. "A lack of trust in humanity's ingenuity has led to a consensus that these environmental emergencies can only be solved through top-down government mandates and powerful central authorities."

Time to speak up

The right's absence from the debate has left a legacy. "In the past, a lot of people on the free market side rejected the

existence of environmental challenges because they did not like many of the solutions offered, or they saw them as overthrowing capitalism," says Lesh. "They now accept that there are environmental challenges and you can solve them with market-based tools, rather than by changing the system."

The BCA says it will only work with organisations that support its mission of promoting market-based solutions to climate change. If a climate-sceptic organisation asks to work with the BCA on a project that involves climate denialism, it will "categorically decline". "We seek to educate and inspire sceptical individuals and organisations that climate change is real and we must all work together to tackle it," it states.

Similarly, Barnard is outraged by government fossil fuel subsidies. In a working paper published last year, the International Monetary Fund found that the fossil fuel industry received \$5.2trn in subsidies in 2017. "The way governments have propped up fossil fuels is crony capitalism," Barnard says. "The true market way has not been tried; this is a question of setting the record straight." 

Do you agree with the BCA's market-based approach to tackling environmental issues, or do we need wholesale change?

HUW MORRIS is a freelance journalist.

CASE STUDY: FISHING FOR SOLUTIONS

A key concept in market environmentalism is property rights. The classic case study in this area is New Zealand's fisheries, which suffered depleted stocks in the absence of constraints on the amount of fish trawlers could catch. In 1986, New Zealand introduced a system that set a limit for each fish stock and allocated individual transferable quotas (ITQs), which can be bought, sold or leased,

to fishermen. This helped rebuild depleted stocks and ensure catches were limited to sustainable levels.

Market environmentalists cite a comprehensive study of 11,135 fisheries between 1950 to 2003, published in *Science*, which found that quasi-property rights or 'catch-share' programmes had reduced the fall in fish stocks by half – and reversed it in some places. If such a system had been in place globally since 1970,

the fisheries collapse would have been cut by two-thirds, the study concluded.

Although they restrict fishing in the short-term, limited property rights systems ensure fishing stocks are not depleted, protect the environment, and make a long-term contribution to the economy, market environmentalists argue. There are now nearly 200 catch-share programmes worldwide.

Reaching nitrate neutrality

A number of local stakeholders have been trying to unplug a planning backlog caused by nitrogen pollution on the south coast.

Catherine Early reports

In June 2019, the fate of 10,000 new homes was thrown into limbo after a decision by the European Court of Justice meant that councils had to immediately halt all planning permissions. The ruling against the Netherlands concerned water quality and appropriate assessments, and meant that in areas where a habitat's conservation status was already 'unfavourable', activities that would add further nitrogen pollution should not be authorised.

Nitrogen had been a problem for several years in the Solent, which contains special protection areas (SPAs) and special areas of conservation (SACs) under the EU Birds and Habitats Directives. Natural England cites the Solent region's water environment as one of the UK's most important for wildlife.

The pollution has caused eutrophication, with mats of algae forming over the mudflats, starving water and sediments of oxygen, and killing animals. They also form a barrier to the birds that feed off invertebrates in the mud, and smother the seagrass beds and saltmarshes, risking erosion and damaging their ability to sequester carbon. The pollution comes from agricultural run-off, as well as background pollution with no known source. In legal advice issued to local authorities, Natural England acknowledged that the amount coming from new homes and tourist accommodation was small, but since it would still add to the existing problem, such development could not be allowed unless it was 'nutrient neutral'.

It also published guidance on how this could be achieved (bit.ly/34xe2lp), including a methodology for calculating a nutrient 'budget' for a new housing development, against which plans to mitigate the impact could be assessed by local authorities. The guidance is being continually updated.

The offsetting solution

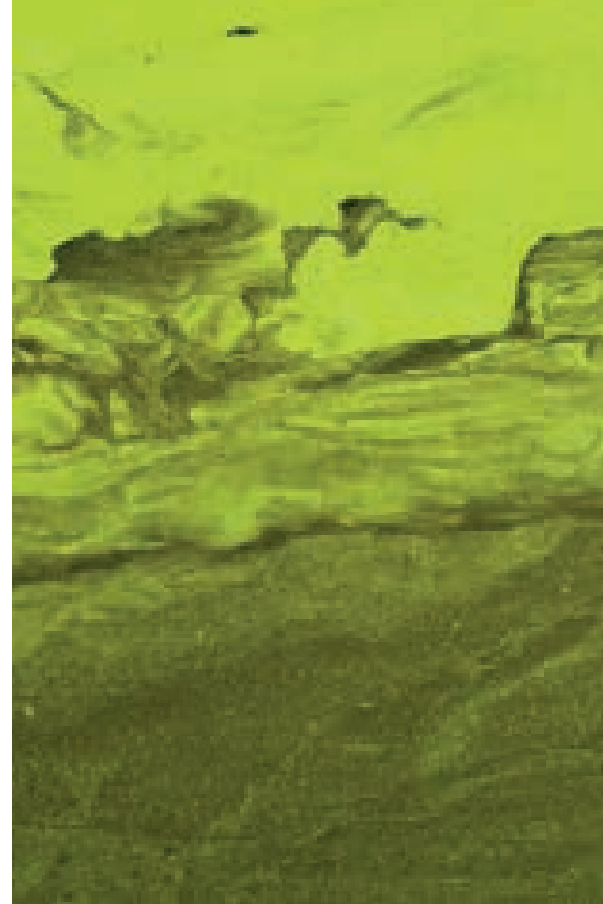
There is no single method for achieving nitrogen neutrality, and local authorities, water companies, farmers and the local wildlife trusts are all working on solutions.

Hampshire and Isle of Wight Wildlife Trust (HIWWT) has bought a 40-hectare farm in Wootton on the Isle of Wight, where it will rewild the land to prevent soils containing fertiliser entering the Solent. It has worked out a credits scheme whereby developers can pay it to offset nitrates from new development via the reduction from its farm. "We've understood the principle of offsetting for a long period of time – we just decided to try and apply it to nitrates," says John Durnell, head of conservation at the trust. "We've had interest from councils and developers, we're just looking to scale it up."

The agreement was complex to draw up, as it is hard for a planning authority to enforce a mitigation measure outside its borough. The legal framework contains elements of section 106 of the Town and Country Planning Act and section 32 of the Local Government Agreement, so Isle of Wight Council can carry out enforcement on behalf of another local authority or delegate it back to them.

The trust's motivation for the project is to protect wildlife on the Solent while creating new habitat – not, he stresses, to help housing development. "We have an opportunity to take intensively managed farmland that is pretty horrendous for wildlife and turn it into wildlife-rich area."

The trust is also fearful that planning delays caused by pollution will encourage the government to dismantle environmental protections after the Brexit transition period. "If they do that, the impact on the Solent will be small compared to the



"We've understood the principle of offsetting for a long period of time – we just decided to try and apply it to nitrates"

impact on all the SPAs and SACs around the country," he says. "We want to find a good scheme that enables us to show the government that nature-based solutions are doable and economically deliverable."

Authorities are also working on solutions via the Partnership for South Hampshire (PfSH). A popular option is upgrading the water efficiency of council housing and requiring stringent water efficiency for new homes. Councils can then use wastewater reductions as 'credits' to enable new building. The strategy is being considered by local authorities including Eastleigh, Havant, Fareham, Gosport and Southampton.

Some councils are considering buying farmland to create credits schemes, similar to the HIWWT's project. These include Havant Borough Council, which in September confirmed that it had bought a farm to offset all nitrogen from its planning application pipeline. Warblington Farm is to be transformed into a nature reserve to provide replacement habitat for Solent waders, brent geese and curlews, and will be run at no extra cost to the council or its residents, since maintenance will be paid for by contributions from developers offsetting their nitrates.

Who pays?

In September, the government announced that it would invest £3.9m in an online nitrates trading auction platform, through which housing developers will buy credits to pay for habitats such as meadows, woodlands and wetlands in order to prevent nitrates from new housing reaching the Solent.

Housebuilders are pleased that such schemes are beginning to unlock the planning backlog, says Andrew Whitaker, planning director at the Home Builders' Federation. However, in his view, developers are being forced to pay to solve a problem they have not caused – he believes it is down to water

companies to treat wastewater from housing before it enters the Solent. "If we're already paying water providers to upgrade infrastructure to deal with housebuilding, then having to pay again for credits is double payment for one problem," he says.

Joff Edevane, growth planning lead at Southern Water, says its hands are tied. Business plans for the next five years had already been finalised with Ofwat as the issue came to the fore, he says. "We're victims of timing. There's no flexibility to go back and ask for more cash, it's fixed for five years."

The regulator is carrying out investigations to calculate what proportion of the problem Southern Water is responsible for. If it is only a small proportion, there would be little point

in upgrading its infrastructure because it will not bring about much improvement, says Edevane.

Whitaker warns that if developers are forced to pay for nitrates pollution mitigation, councils will have to reduce developer contributions for other issues in order to keep sites viable – with the casualty being affordable housing. "We'd rather have some kind of clear way of dealing with the issue at a strategic level," he says.

Thinking long-term

Edevane says that it may make more sense to incentivise farmers to change land management practices, as building new infrastructure would increase greenhouse gas emissions during construction and operation.

He favours a scheme being undertaken in Poole Harbour. Wessex Water worked with farmers to develop the EnTrade scheme, which pays farmers per kilogram of nitrogen saved through good farming practices. These can include planting cover crops to suck up nitrogen and prevent soil being washed away, explains Wessex Water senior catchment manager Adrian Moore. The utility hopes this will avoid the need to build new treatment works. "We've been fairly successful – we have a 40-tonne target, and other than the first year when we were trialling it, we've overachieved," he says. "In some years we've offset up to 70 tonnes."

In June, the government awarded £150,000 to the Poole Harbour Nutrient Management Scheme, which it will use to develop tools such as EnTrade. Farmers hope this will avoid the area being designated as a Water Protection Zone, which would regulate their practices much more tightly.

Some authorities in the area are also considering buying credits from farmers using developer contributions for new housing, Moore adds. He believes the scheme could be used for other pollutants in other locations. "It might be phosphate or sediment or carbon – the principles are the same. It could become a form of income for farmers – they will be able to sell offsets to businesses and water companies. It's nitrogen at the moment, but crack that and hopefully the rest will fit into place." 🍷

CATHERINE EARLY is a freelance journalist.



A whiter shade of pale

Why are the world's coral reefs declining, and what can be done about it? **Sally Best** investigates

Coral reefs are a vital part of the natural world and have a net global worth of £6trn a year. They host 25% of known oceanic life despite making up just 1% of the ocean floor, and protect coasts by reducing wave impacts along coastline. They also generate billions of pounds of fishing and tourism revenue.

However, a combination of stresses have caused the loss of 50% of reef cover over the past 30 years, with projections suggesting 90% of reefs will be under threat by 2030 if no change is made.

What is a coral reef?

Coral reefs are animal, plant and mineral. The animal constituent consists of thousands of individual corals called polyps. These invertebrates secrete calcium carbonate, which provides a exoskeleton for corals to live on. Many species also contain a photosynthetic algae called zooxanthellae. The algae provides the coral with the food that it synthesises, while the coral gives the algae a place to live.

Sexual reproduction, known as 'broadcast spawning', generally occurs once a year. The embryos drift for a few days before developing into larva, which settle on the sea floor. These events are highly dependent on multiple factors, such as lunar cycles, sea temperature cycles and time of day.

Asexual reproduction occurs via 'budding' or fragmentation – whereby the coral divides into clones within the same colony. Fragmentation occurs where bits of coral are broken off through wave action, storm events or even animal intervention.

A trio of threats

Pollutants such as oil, agricultural runoff and chemical spills can disrupt coral systems' growth and reproduction, and can also cause disease and mortality. Many of these pollutants are a result of human development in coastal areas.

Corals are also highly attuned to water temperature. A 1°C rise can cause the polyp to expel its algae, meaning it no longer has a food source; it also appears

white or 'bleached'. The symbiosis can be reformed if temperatures reduce and it is quickly re-established; otherwise, the coral will die.

During the past 30 years, the sea's surface temperature has consistently been at a record high – and warming events are happening more severely and frequently. A major bleaching between 2014 and 2016 harmed more than 70% of global reefs. Scientists are still trying to understand the causes and ramifications.

Increased CO₂ also prompts ocean acidification. Sea water absorbs excess CO₂ from the atmosphere, which reacts with water to form carbonic acid. This dissolves calcium carbonate, degrading the exoskeleton and leaving no home for the polyps. Recent estimates have

"Increased CO₂ prompts ocean acidification, degrading the coral reef exoskeleton"



SECORE has also recently begun developing coral settlement substrates that self-attach to an existing reef, meaning large numbers of coral growths can seed onto a reef without having to be transplanted by hand.

Building stress tolerance

Some researchers are using 'assisted evolution' to enhance traits that will increase reef tolerance. This involves identifying coral sites with high resilience to environmental stressors. It is then possible to create hybrids between this resistant coral and other less tolerant coral from other sites, outplanting the offspring onto the less tolerant reef. This introduces different genes into struggling coral ecosystems.

Conditioning involves exposing adult colonies to stressors in order to increase the tolerance and fitness of offspring and their zooxanthellae. Prolonged stress should cause the coral to express genes that enable it to cope better in altered environments.

The restoration of reefs is cost and time-intensive, and limited in scale. Outplanting fragments requires manual transplantation – an arduous task

that may not keep up with the rate at which reefs are declining. Restoration techniques need to be upscaled urgently. Past reef restoration science seems to have primarily focused on short-term experiments that evaluate the initial establishment phase of outplanted coral. Future experiments should aim for a long-term assessment.

There is a small window in which we can stop the devastation of the remaining 50% of reefs and the benefits they provide. Concerted efforts to reduce greenhouse gas emissions will be crucial if we are to halt the warming and acidification of the oceans. Additionally, efforts must focus on increasing the scale of restoration in this race against time. 🌊

SALLY BEST is an environmental biologist and scientific journalist.

calculated that ocean pH could decrease from 8.2 to 7.8 by the end of this century, meaning ocean acidity would be the highest it's been in the past 20m years.

These stressors decrease reef health and increase susceptibility to disease. Stony coral tissue loss disease, for example, attacks a reef's hard 'framework' corals, and affects more than 20 species in the Caribbean. The cause is a suspected pathogen that can spread rapidly over and between reefs. Efforts to monitor it are under way, in the hope of identifying the cause.

Reef restoration

Bleaching and disease have highlighted the need for novel management strategies such as Marine Protected Areas, catchment management to improve water quality, the ending of destructive fishing practices, and global governmental consensus for reducing greenhouse gas emissions. Restoration is also crucial; this includes growing asexually or sexually derived corals in land-based or ocean nurseries and then outplanting them onto degraded reefs.

The use of asexually derived corals mimics the 'fragmentation' processes by which corals reproduce. Scientists on the Great Barrier Reef are taking cuttings

from healthy corals that survived the bleaching of 2014-2016. These are attached to coral tree frames in ocean-based nurseries and then, once grown, re-attached to damaged areas of the reef. The hope is that any propagated coral colonies will be more resilient to any higher water temperatures.

However, at present, outplanted corals have a relatively low survival rate. It also takes a while for species that are supported by the reef to return. And although this method increases colony tolerance, it does not promote genetic diversity.

SECORE, an organisation concerned with coral reef conservation, is focusing restoration efforts on the use of sexually reproduced coral juveniles. This involves collecting coral gametes during spawning events and mating them via in-vitro fertilisation to produce genetically unique larvae. These may be reared in the ocean or in land-based nurseries. Resulting growths are placed back onto an existing reef, adding new genes and so increasing genetic diversity and resilience. These new genotypes within the reef may cope better with variable environments.



The 15-minute city

Emily Gould discusses how concepts of hyper-proximity, self-sufficiency and doughnut economics could influence the redesign of our cities

The shift to home working in 2020, for those who worked in offices, has brought attention to the idea that we could redesign cities and towns in a way that promotes convenience, wellbeing and community. Now many people are spending more time in their local area, they will need more from local amenities. The pandemic has shown the interdependencies of hyper-local living, place-based solutions, and social and economic resilience. Do we want to decentralise cities for the longer term?

Polycentric cities could help regenerate high streets and repurpose monocultural zones that currently have a singular function, normally based around office hours. They would need to provide multifunctional shared spaces that complement flexible lifestyles and providing digital connectivity that stimulates local productivity. This, coupled with road reallocations, better street space and greater provision for active travel, would support a more inclusive, community-focused economy.

Reducing the access radius

The 15-minute city concept is not new, but has recently been proposed by the C40 Cities Climate Leadership Group as key to a green post-COVID-19 recovery.

Developed by Professor Carlos Moreno at the Sorbonne, Paris, the 15-minute city is one where all residents are able to meet their needs within a short walk or cycle ride from their home. These needs include access to local health facilities, employment, WiFi, schools and shops.

Professor Moreno, who is also the mayor of Paris's special envoy for

smart cities, explained: "There are six things that make an urbanite happy: dwelling in dignity, working in proper conditions, being able to gain provisions, wellbeing, education and leisure. To improve quality of life, you need to reduce the access radius for these functions." Mayor of Paris Anne Hidalgo used the 15-minute city as a pillar of her re-election campaign in 2020, and as part of the impetus to make all Parisian roads cycle-friendly by 2024.

In Melbourne, the Minister for Planning launched the 20-Minute Neighbourhood Pilot Program in January 2018 to test the delivery of 20-minute neighbourhoods in locations across the city. The project found that place-based planning of local services and infrastructure is necessary. Plan Melbourne now wants to "embed an approach to 20-minute neighbourhoods in major infrastructure projects...to ensure surrounding communities benefit from the coordinated planning of state and local infrastructure". Sydney, meanwhile, is exploring the concept of a 30-minute city.

Ireland's Southern Regional Assembly has explored how European regions

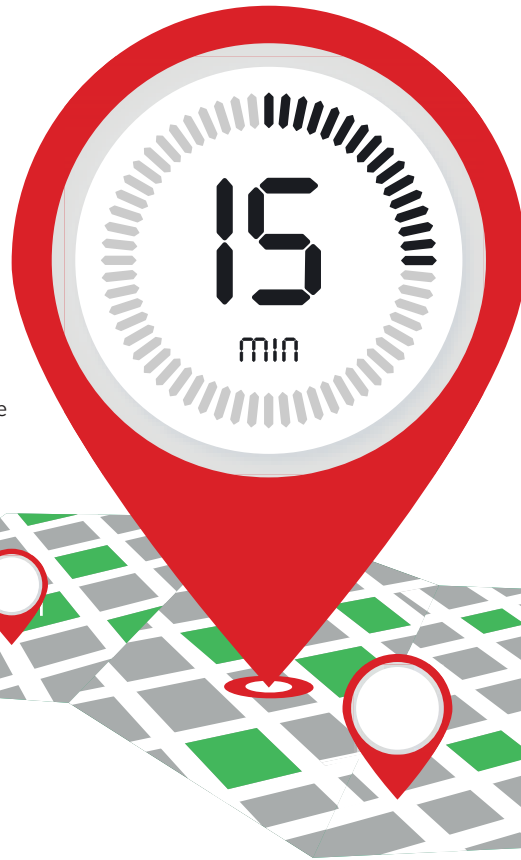


have improved policies to increase use of sustainable transport and reduce carbon emissions. It published the *10 Minute Towns Accessibility & Framework Report* (bit.ly/3msekQx) in September 2020, proposing that community facilities and services should be accessible within a 10-minute walk or cycle from homes, or by public transport. It is focused on improving connectivity between residential and community areas, but there also need to be efforts to decrease car use and provide alternatives for those with additional needs.

Self-sufficient neighbourhoods

The self-sufficient neighbourhood concept comes from the idea that cities should be able to produce the resources they need locally. Xiong'an New Area, 100km from Beijing, is an 'ecological civilisation' development merging European city blocks with modern Chinese towers and urban farming. The city will be self-sufficient and foster a circular bioeconomy using renewable energy and resources to produce food, energy and materials. It will provide co-working 'digital factories' with 5G connectivity, offering 3D printers and rapid prototyping machines to produce everyday goods. It will be accessible by four high-speed train lines and two canals connecting it to Beijing and Tianjin. The design specifies pedestrian and cyclist-only streets, and assumes that drones will be used for deliveries in order to free up the roads.

The New Area aims to reduce disruption to daily life during periods of confinement, and to set a new living standard post-COVID-19. However, while developments such as this address the issue of monocultural zones, could they restrict diversity, culture and equality through segregated living and pseudo-public space? We need to think about what we want from our cities, and about the draw of vibrant city centres and sprawling neighbourhoods.



to explore what it would mean to thrive 'within the doughnut', given the city's location, context, culture and global interconnections. However, for a city to realise its potential and implement changes, it will need a network of changemakers across government, business, academia and community networks, who must foster the principals of doughnut economics.

Are these ideas here to stay?

Polycentric and self-sufficient cities are similar concepts focused on local, sustainable and accessible services provision. COVID-19 has led many people to re-assess their needs

"The 15-minute city is one where residents are able to meet their needs within a short walk or cycle ride from their home"

and quality of life, and highlighted the importance of local amenities, rather than ease of commute. However, the polycentric city isn't just about putting a coffee shop in a new block of flats – it will involve rethinking the way we design cities in order to increase communities' productivity and resilience. The doughnut city concept can be used to redefine what a thriving city is, combining social goals with ecological goals and local aspirations with global responsibility.

Some argue that polycentric cities will widen employment access by removing travel barriers, but this seems an oversimplification. A number of people will still commute long distances for jobs and experiences. Implementation of polycentric and self-sufficient cities will need to carefully consider the functions and roles of specific areas and establishments, and their impacts on different communities. Hyper-proximity will require us to overcome centuries of city planning, and the societal and economic structures that have led to city centres and high density living. **►**

Developed by Kate Raworth, a senior research associate at Oxford University, 'doughnut economics' is an economic model that envisions "a world in which people and planet can thrive in balance" and is aligned to the UN Sustainable Development Goals. It has been adapted into the Thriving City Portrait, a tool for driving systemic change that would make cities more humane.

The Thriving City Portrait allows cities to reflect on opportunities and challenges involved in alternative policy initiatives, and creates a holistic snapshot of a city in order to stimulate innovation. Amsterdam has used it

DR EMILY GOULD, PIEMA leads on Cleaner Transport for Amey Consulting.

Biodiversity

I have spent most of my career trying to simplify biodiversity for people. I was wrong – not about impressing on businesses the importance of biodiversity to their survival, but in trying to rationalise it onto a PowerPoint slide. Despite my carefully honed bullets, businesses often missed the point.

As scientists, we're told we need to be accessible, and advance public understanding of our work. Humans crave the direct, not the nuanced; the label, not the portfolio of choices the label represents. Sometimes, however, we need complexity. Biodiversity is the set of messy and beautiful interactions that exists between everything on the planet. When we try to assess the sustainability of our actions, it's to biodiversity that we should look.

A single figure

Carbon is the currency of sustainability. While it does not explain all interactions between organisms and their environment, it is a relatively simple input-output calculation, giving a single number that begs to be turned into a key performance indicator.

Life doesn't reduce to a single number, though. Say you're a furniture company that imports timber from Indonesia and you plant trees in the Scottish Highlands to offset your carbon. If you plant enough, you can balance your carbon equation – but are you sustainable? Hardly. By focusing only on carbon, you risk ignoring other important issues. The trees felled in Indonesia may have provided habitat for rare species, or supported pollinators for economically important crops. They might have slowed rainfall and prevented soil erosion. Unless we look through the lens of biodiversity and ecosystem services, we cannot understand if our actions are sustainable – but in a world that values the simple, we believe a balanced carbon budget represents success.

The bigger picture

Corporate responsibility reports don't just mention carbon; they talk about

The whole picture

We must be prepared to embrace complexity and note the interconnectedness of sustainability issues, argues **Stephanie Wray**

A selection of biodiversity tools

Biological Diversity Protocol:

A tool for assessing current performance, tracking target progress, third-party certification and biodiversity accounting at the site, supply chain and corporate levels

www.bdprotocol.org/bdp-protocol

The Biodiversity Footprint for Financial Institutions

seeks to calculate the biodiversity footprint of the economic activities in which a financial institution invests

bit.ly/3kw6BjS

Biodiversity Impact Metric:

An assessment of current performance and a comparison of options at the supply chain and corporate levels

bit.ly/34rPWbE

Biodiversity Indicators for Site-based Impacts:

An assessment of performance from site to corporate level, providing insights into biodiversity performance on the ground

bms.biodiversity-performance.eu

Defra Biodiversity Metric:

A tool to assess site-based impacts on habitats as a proxy for biodiversity

bit.ly/2TsQPKO

Environmental Profit and Loss Account:

A tool to quantify the use of natural resources financially

bit.ly/2HCC8lo

Species Threat Abatement and Recovery Metric (STAR):

A means of measuring the contribution of investments to global biodiversity targets

bit.ly/31J7oqg

Figure 1: Ecosystem goods/services provided by biodiversity



Source: Nature Positive

social issues, water, plastics and a range of other things. The problem is that we talk about each in isolation. Until we accept the interconnectedness of the issues, we can't fully understand them or be sure we are paying attention to the critical, rather than the fashionable.

Consider the ancient Indian tale of the blind men introduced to an elephant. Each man conceptualises the animal based on the part he can feel, declaring it a wall, a tree or a hose depending on whether he touched its side, leg or trunk. They all believe their senses and think the others are dishonest, but none has the information needed to understand what makes a whole elephant. When we pick off individual dimensions of sustainability and expect to tackle them in isolation, we're only touching part of the elephant. We need to take a step back and see the whole picture.

For years, our industry has been on a quest for a simple, numerical, all-encompassing biodiversity metric. There are lots of approaches to this (see box). But if we want to understand our impacts on biodiversity, we need to consider a whole range of things, including land use change, pollution, climate change, invasive species and overharvesting of species. The issues can be nuanced and subtle. To summarise this in one number is not a helpful reflection of the real world, and won't be useful in defining actions. What we must do is embrace complexity and devise proxies that help us understand it.

Embracing complexity

If we are to tackle climate change and biodiversity loss, we need to use systems thinking in order to understand interrelationships, perspectives and boundaries. As policies alter in response to the UN's Post-2020 Global Biodiversity Framework, we will need to make changes in the way we do business. We're seeing a rise in corporate commitments through science-based targets and the Task Force for Nature-related Financial Disclosures, but the plethora of available tools alone won't help to keep these promises; a paradigm shift is needed. Rather than hide behind the blanket word 'biodiversity', we need to unpack it (Figure 1).

A word of caution: being able to identify, measure or monetise different aspects of the ecosystem services provided by biodiversity doesn't mean they are fungible. Environmental net gain is a form of multicriteria analysis, and we need to get all the numbers into the green zone.

When we embrace complexity and focus on the whole system, biodiversity functions as sustainability's organising principle. If you want to know if your undertaking is sustainable, ask: does it deliver a genuine net positive outcome for nature? If so, the other dimensions of sustainability will fall into place. 

STEPHANIE WRAY is managing director at Nature Positive.

The word 'harmony' appears in the UN's 2030 Agenda for Sustainable Development three times, yet the concept is not clearly defined. Some

philosophers describe it as the idea that everything is interconnected and ideally exists in a state of balance – a notion accepted in many cultures around the world. In Western thinking, the idea of harmony has been fundamental in everything from Plato's teachings and the Renaissance to the theories of relativity and quantum mechanics. But, as society has come to favour a more reductionist and materialistic worldview, it has become increasingly undervalued.

A new book, *The Harmony Debates*, sees contributors from fields spanning ecology, food, religion, education, and business, discuss how the pursuit of a harmonious existence could transform our understanding of the natural world and our approach to sustainability.

A new perspective

When taken together, various UN documents broadly define harmony as sustainability, care for the natural environment, economic equality, government based on democracy and the rule of law, and justice and rights for all. However, sustainability has different meanings for different people.

"It describes relationships between the environment, society and economy that can be sustained over long periods of time for mutual benefit," explains Dr Nick Champion, editor of *The Harmony Debates* and professor of cultural astrology at the University of Wales Trinity Saint David (UWTSD). "The problem is that sustainability has been reduced to the narrower matter of environmental management, and has been appropriated by some industries in ways that many find uncomfortable."

In practical terms, harmony means "looking at the widest possible consequences whenever a policy or personal choice is made", says Champion. He points to various decisions that have failed to consider the interconnectedness of things, from

Finding harmony

Appreciating the ancient concept of harmony and the idea that all things are interconnected could be transformative for the sustainability profession and society at large.

Chris Seekings reports

the 1970s' introduction of plastic bags to save trees, to the 1990s' promotion of diesel to cut CO₂ emissions. "Although well intentioned, they were ultimately quick fixes that didn't take into account plastic waste or air pollution."

Systems thinking or total cost accounting within a circular economy could help us recognise the wider consequences of planning decisions, but some believe that a deeper understanding is required. "There are many people working in harmony-friendly ways, but sustainability often struggles to find a philosophy," Campion says. "What I like about harmony is that it has been debated for 2,500 years, unlike ecocentrism, which only goes back two or three decades. We have this long lineage of thinking about interconnectedness – it's part of our tradition, and can help change perspectives."

Social and spiritual

The ecological philosopher Freya Mathews sees humanity as being made up of discrete individuals who are separated from one another, bounded by the limits of the physical body and distinct from other elements of the environment. Critics argue that this understanding of the world has had a trickle-down effect in Western society and culture, separating the human world from the natural world and emphasising the individual over the collective.

"Much more ancient notions of harmony see human beings as an integral part of the whole," explains Dr Jack Hunter, an ecology professor at UWTSD. "There has been a tendency to think of the ecological crisis as a problem for technology and the 'hard sciences' to solve but, increasingly, scholars are recognising that there is also a social and spiritual dimension to our ecological crisis."

It may be that climate change and environmental breakdown are as much about our values and social, political and spiritual motives as they are about CO₂ emissions. "Human behaviour is motivated by the things we believe and the way we think about and engage in

the world," Dr Hunter continues. "If we think about spirituality as a particular understanding of our place in the cosmos, then the ecological crisis is a spiritual crisis – a lack of connection to the ecological systems that sustain us. Environmentally destructive behaviours can therefore be altered by changing the way that we think about and orient ourselves in the world."

In permaculture – a design system rooted in observations of ecological systems – it is often argued that many small and slow solutions are needed to tackle the climate crisis, rather than instant, large-scale revolution. These solutions might include acts such as individuals rewilding their gardens with wildflower seeds, or local groups establishing community gardens and social growing projects, alongside governments and NGOs' large-scale efforts to cut carbon emissions. "The truth is, they don't have to be conceived as connected to each other, but because

"Increasingly, scholars are recognising that there is a social and spiritual dimension to our ecological crisis"

of the interconnected nature of our biosphere, they are anyway," says Dr Hunter.

Practical steps

Tony Juniper, chairman of Natural England, describes his exploration of harmony as "one of the most important learning experiences of my life". In *The Harmony Debates* he outlines the importance of "reconnecting people with the reality that that we are 100% dependent on healthy natural systems for our wellbeing."

IMAGES: SHUTTERSTOCK

Ethics

A first step to developing a more reciprocal relationship with nature could involve appreciating how soils, plants, and the other living and non-living elements that make up the world are key if we are to maintain our modern lifestyles. "There are lots of ways of doing this, ranging from everyday interactions with nature in gardens or while out walking, through to more extreme forms of participation, such as mountain climbing, surfing and hiking," Dr Hunter suggests.

Education systems could also help us cultivate a richer understanding of the natural world and our place in it. Dr Caroline Lohmann-Hancock, social justice, equity and diversity senior lecturer at UWTSd, believes that all subjects should be taught in the context of interconnectedness. "Whatever you teach, STEM subject or otherwise, they are not just in a box – they are totally interlinked," she tells me. "The wellbeing of one depends on the wellbeing of another, and we should link that to environmental elements – that holistic learning goes back to the classics, and it's obvious that we need a more holistic curriculum."

Part of the problem with facing up to these principles is that they raise questions over whether we need wholesale changes in the ways we

"Is reducing the environmental footprint of technology enough, or do we rethink the way we structure society?"

behave, the idea of which makes some feel uncomfortable.

"Is reducing the environmental footprint of technology enough, or do we need to rethink the very way we structure society – full stop?" asks Dr Lohmann-Hancock. "I don't really know the answer, but as educators, it is so important that we encourage others to consider alternate viewpoints through exploring 'provocative situations', with which they might not agree, so they can see the fuller picture. Exploring this alternate position is called catalytic learning, creating disequilibrium within a class to disturb their confidence in the 'known', to provoke thought,

discussion and reflection; and hopefully develop empathy for others."

An enduring debate

The idea that all things are interconnected and interdependent has implications for health studies, education, business, architecture, agriculture, conflict resolution and a range of other disciplines. There are tensions between the need to promote economic development, and to maintain the health of the natural environment.

We could also slip into a difficult human rights area if we assert that people are subject to wider ecological concerns. "It could open the door to a limited version of democracy and authoritarian politics where rights are overridden," Dr Champion says. "But there is an alternative in which harmony is maintained when everyone's individual perspective is respected – social justice and equality must be centre."

A reductionist approach to sustainability may also be valid in some circumstances, but the purpose of *The Harmony Debates* is to provoke philosophical discussion and reflection, rather than provide clear-cut answers.

Extinction Rebellion and the Youth Strikes for Climate, spearheaded by Greta Thunberg, are good examples of an upswell in ecological consciousness already taking place, while the coronavirus pandemic has shown how our disregard for nature can have devastating effects in a globalised world.

"We simply cannot solve the problems we have caused by responding with a 'business as usual' approach, trying to bounce back from every knock we take using the conventional approach, which only compounds the problem," the Prince of Wales writes in *The Harmony Debates's* foreword. "We have to look again very seriously at the philosophy of wholeness that held sway for so long in all of the world's great sacred traditions. The clues are to be found in the way we once revered the Earth and spoke openly of our inherent sense of the sacred, but above all in the inherent genius of nature herself. There lie the seeds of the answers, I promise you." 



The Rebuild Diaries

Are your environmental management and sustainability practices likely to become more or less important due to COVID-19? For 74% of the 453 corporates in six countries quizzed by the Carbon Trust, the answer is 'more important'. However, the picture in the UK is less encouraging: that 74% drops to 58% – lower than Germany (82%), Mexico (79%), Spain (78%), France (75%) and Singapore (72%).

UK firms are also less convinced that the pandemic will drive environmental and ethical behaviours. Sure, 64% say their customers' attitudes will change for the better, but this was above 70% elsewhere, and in Mexico and Germany it was more than 80%.

This is a small sample, but it caught my eye. Another way to look at the results, of course, is that UK companies were already on the responsible road – 31% say their 'green' priorities are unlikely to change as a result of COVID-19, more than in other countries. Perhaps they didn't need a pandemic to push them on this.

Whether businesses shift doesn't just come down to boards, or customer demand: many move in anticipation of regulation. This crisis has certainly made them think hard about an arguably more deadly one: climate change. "Do we rebuild what we had before?" asked European Commission vice president Frans Timmermans (*below right*), launching the EU's green recovery plan. "Or do we seize the opportunity to restructure and create different and new jobs that can serve us for decades to come?"

The UK has its own green industrial revolution plan. According to prime minister Boris Johnson, we will soon be cooking breakfast using hydrogen, before driving an electric car to our 'green' job. Poppycock? Maybe not, but the government will need more than a wish list to get us there.

The week before the government announced its 10-point green plan, the National Audit Office (NAO) produced an analysis of how the government is shaping up against its ambition for ours to be the first generation that leaves the natural environment in a better state than it inherited. In short: not that well. Gareth Davies is head of the NAO. "It's now nine years since the government set this ambition and it still

does not have the right framework to achieve it," he says.

The 25-year environment plan of 2018 put everything in one place, but the NAO notes that "it does not provide a clear and coherent set of objectives", and that timescales are "varying and unclear", with detailed strategies in place for just two (waste and clean air) of 10 goals. If the pace was sluggish pre-COVID-19, the NAO is justified in its concern about post-pandemic clarity.

In November, the government is hosting COP26 in Glasgow, where negotiations will hone rules for carbon markets under the Paris Agreement – and yet at the time of writing, it seems conflicted between an emissions trading scheme that aligns with the EU's, and a carbon emissions tax.

Leaving the EU will also put the UK in the spotlight. Ministers have pledged to meet or exceed the EU's environmental protections and laws – but will they? The environment bill could be world leading. Experts are not worried that deregulation will become the default: there is far too much political capital invested in the government's green sheen. However, that doesn't mean the ties won't be loosened, or left to rot. "It's informalisation and stagnation we are most concerned about," Veerle

Heyvaert, professor of law at the London School of Economics, told me recently.

"Slowly but surely humanity is taking the upper hand in the fight against the virus," Johnson wrote in the *Financial Times* on the day he launched his new green plan. Can the same be said for climate change – a crisis that crept up on the world, rather than jumping out of the shadows? The next few months will tell us more. 

DAVID BURROWS
is a researcher and
freelance writer.

**"THE COVID-19 CRISIS
HAS MADE BUSINESSES
THINK HARD ABOUT
A MORE DEADLY ONE:
CLIMATE CHANGE"**

EXIT



CONNECT

SOCIAL AND COMMUNITY NEWS FROM IEMA



Opportunity knocks

How might impact assessment enhance positive benefits for nature, biodiversity and communities after COVID-19? **Joe Nisbet** reports



Boris Johnson has announced his desire to 'build, build, build' in order to stimulate an economic recovery from COVID-19. It is important that environmental and social benefits are promoted as a key pillar of this 'infrastructure revolution' – especially as forthcoming planning reform in England could see deregulation and simplification of project environmental impact assessment (EIA) – see the government's 'Planning for the future' consultation at bit.ly/2Hj4oKl

What role might EIA play in helping us 'build back greener'? Well, we could use this period to promote opportunities to

enhance nature and improve communities' wellbeing. The UK faces pervasive biodiversity loss and profound economic challenges to local businesses and communities, so using EIA development to deliver enhancements would seem a no-brainer – particularly if viewed as an 'aggregate system' where benefits could accrue over multiple projects. It would be even better if that aggregate effect was strategic, perhaps on a national scale, so that benefits are directed to receptors that need them most.

Challenges

There are undoubtedly challenges to creating additional benefits through EIA. Some of the existing barriers include:

- Lack of any legislative requirement to 'enhance'
- Enhancement may be viewed as costly and time-consuming
- Uncertainty as to who is responsible for long-term management and financing.

There are also future challenges if we are to deliver more development at a faster rate. In England, the language used for wider EIA reform is 'quicker, simpler and consolidated'; it is important that the environmental and socioeconomic benefits of EIA aren't lost through this reform (see Bond et al.'s 2014 paper *Impact assessment: Eroding benefits through streamlining?*, available at bit.ly/3knIUKB). Any simplification could place enhancement further down the list of priorities, if even existing best practice and environmental standards for EIA are at risk of being watered down.

Opportunities

In terms of promoting enhancement, we might look at sectors that already create additional benefits as part of their planned project deliverables, such as onshore renewables. Success in this industry creates an argument for publishing bespoke sectoral best practice principles concerning enhancement, endorsed by relevant industry bodies. The guidance on biodiversity net gain released by IEMA, the Chartered Institute of Ecology and Environmental Management, and the Construction Industry Research and Information Association (bit.ly/3jlmAji) could act as an initial template.

This approach could help foster a mutually competitive environment among similar developers that recognise enhancement as an opportunity to be looked on favourably when it comes to planning consent. Following this, it's

"Forthcoming planning reform in England could see deregulation and simplification of project EIA"

important to identify and promote case studies of exemplary projects that show both environmental and social gain.

The enhancement of nature and society should also be accepted as a project objective at the start of the process, before designs are 'fixed'. The same is true of mitigation. This would help prevent the deployment of expensive offsetting and enhancement schemes as an afterthought or 'cherry on top'.

IEMA has published six recommendations for ensuring an effective EIA system in the face of reform (bit.ly/2HyXRv2). Two in particular promote the creation of additional benefits:

- Publish clear requirements and standards for EIAs – promote enhancement of positive impacts as a core objective of EIA
- Ensure Environmental Management Plans (EMPs) are central to the EIA process – EMPs are a great mechanism for clearly detailing enhancements. They can provide clarity on implementation, which can aid transcription into planning conditions.

Hopefully, COVID-19 can be a catalyst for positive change. Holistically creating benefits for nature and society as part of development will be crucial if we are to 'build back greener'. At the time of writing, consultation on EIA reform is expected to be held in the autumn of 2020, with details to follow in 2021. Perhaps this is an opportunity for IEMA, the wider impact assessment community and graduates entering the sector to shape the change we want to see. 

JOE NISBET is an IEMA Futures Steering Group member and an incoming graduate consultant at Arup.



The reading room

New books to be inspired by...

Who Owns England?

Marek Bidwell discusses Guy Shrubsole's book on land ownership inequality in England



Over time, the value of land is inflated by investments around it and the increasing scarcity of its natural resources; the landowner can sit back, charge rent and cash in. This wouldn't be a problem if land were equally distributed, but in England, that is far from the case.

In *Who Owns England?* Guy Shrubsole deals with who these landowners are, how they came to own so much, and the implications for everybody else. Shrubsole deduces that 30% of England's land is owned by the aristocracy and gentry; 18% by private companies; 17% by wealthy individuals, many of whom don't live in England; 8.5% by the state; 5% by homeowners; 2% by conservation charities; 1.4% by the Crown; and 0.5% by the Church.

Shrubsole links land inequality with many ills affecting England: the housing crisis, wealth inequality, tax avoidance, money laundering, deforestation, incinerated uplands, and lack of access to the country for the ordinary person. He writes: "The civil offence of trespass means that anyone setting foot on land where no public right of way exists without the consent of the landowner is a trespasser, and can be prosecuted."

The Countryside and Rights of Way Act of 2000 established a right to roam in only 8% of England. Shrubsole places the cause far back: "It was William the Conqueror who declared that all land in

England belonged ultimately to the Crown, straight after the Norman Conquest of 1066. At William's instigation, titles in land henceforth would be derived from the Crown. The king sat at the top of this feudal pyramid, and the whole country was now his to carve up as he pleased: a giant cake to be cut into slices and handed out to cronies. Four

thousand Anglo-Saxon thegns were replaced by less than 200 Norman barons and clergy." Much of this land is still owned by their descendants: Shrubsole writes that when the 6th Duke of Westminster was asked to advise young entrepreneurs how to succeed in Britain, he replied: "Make sure they have an ancestor who was a very close friend of William the Conqueror."

Shrubsole writes a manifesto for land reform: ending unsustainable land practices, land ownership secrecy, the empty homes scandal and the sale of public land; banning overseas companies and trusts from owning land and property in England; rejuvenating the green belt; and extending the right to roam. Many of us advise organisations that own a large amount of land. We must help them understand that this comes with obligations, determine what those obligations are, and work to restore the balance.

Read the full version of Marek's review at bit.ly/3696So3

MAREK BIDWELL, FIEMA CEnv, is director of environmental training and consultancy firm Bidwell Management Systems.

Calling IEMA bookworms...would you like to submit a book review? Which books have informed your thinking and would you recommend? Get in contact with The reading room at features@iema-transform.com



Why did you become an environment/sustainability professional?

I enjoyed **geography** at school, and thinking about the relationship between humans and the wider world. It always seemed the most logical professional choice.



What was your first job in this field?

I was responsible for carbon reporting for a large UK charity after finishing university. I realised from the start that reducing carbon made business sense.

How did you get your first role?

I needed relevant work experience, so I applied. You have to be prepared to take entry-level roles that introduce you to a particular sector or area of specialism.

What does your current role involve?

I set the environmental and sustainability direction for Atkins Transportation, creating strategies and improvement programmes that will shape the way we deliver transport infrastructure projects and operate as a responsible business. I get to engage with clients, local government and industry interest groups on sustainability solutions.

How has your role changed/progressed over the past few years?

There is such momentum and urgency around sustainability now, so my role doesn't require as much influencing as before, but prioritising what you deliver is harder. We need to use our time and energy carefully to create most impact.

What's the best part of your work?

You have the chance to create real benefits for nature and humanity.

What's the hardest part of your job?

There is a lot of attention around sustainability now, which can be distracting. I constantly take a top-down view against my strategy to stay focused.



MEMBER CAREER PROFILE

Nicholas Hunter

FIEMA CEnv

Head of environment and sustainability,
Atkins Transportation

What was the last development event you attended?

Rail Wellbeing Live – a fantastic virtual event bringing together experts on health and wellness topics.

What did you bring back to your job?

Feeling mentally well is critical to being productive. I learnt some rest and resilient thinking tactics that will help during testing times.

What is/are the most important skill(s) for your job?

Be able to simplify and communicate technical challenges to turn them into business-ready solutions. You can be excellent technically but you must also be positive, clear and easy to work with.

Where do you see the profession going?

It will become even more influential, especially in big corporates. I also think sustainability data maturity will peak in a few years;

assessment tools and modelling will have a different role to play in informing decisions once reliable data is better known and shared.

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

Setting even more ambitious and credible sustainability performance targets.

What advice would you give to someone entering the profession?

Treat failure as feedback. You can gain just as much from something that didn't work as from something done well. Keep getting practical experience, as there is so much variety across the profession.

How do you use the IEMA Skills Map?

I first used the Skills Map when looking at internal training and competency programmes for staff. It is important that staff keep a reference point for competencies.

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

Positive, passionate, pragmatic.

What motivates you?

Making a positive contribution.

What would be your personal motto?

There is power in simplicity.

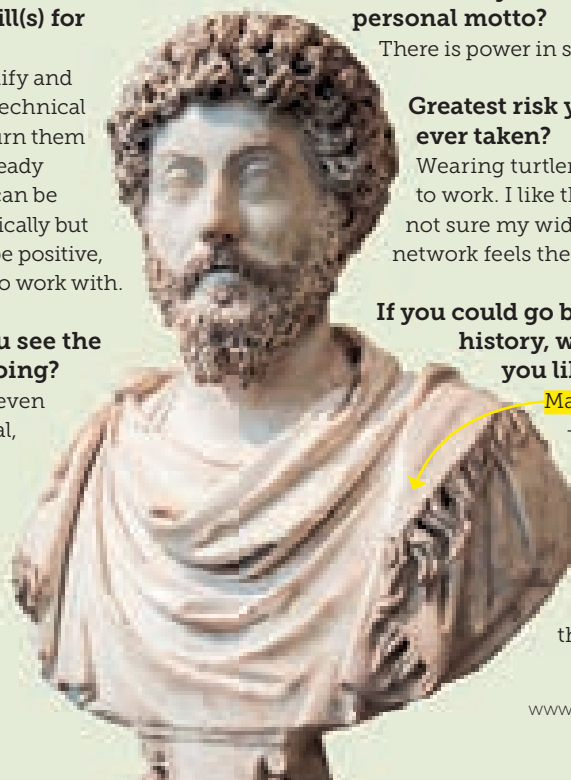
Greatest risk you have ever taken?

Wearing turtleneck jumpers to work. I like them but am not sure my wider professional network feels the same!

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

Marcus Aurelius

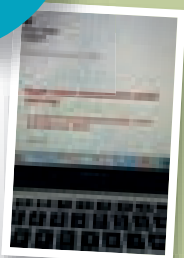
– a Roman emperor and Stoic philosopher. We can still apply so much of that ancient thinking today.



QUOTE UNQUOTE



Really informative webinar on the newly published #HIA in #SpatialPlanning guidance by @PHE_uk and the HIA outlook journal by @iemanet @MATT_ORME_



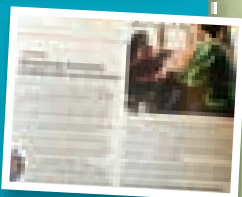
Pleased to have received my @iemanet Associate Membership today. I am looking forward to further developing my environmental and sustainability management expertise! @THEA_SHAY



It's been a while since I read @IEMA_Transform on a train but this month it has one on the cover. @RSSB_rail describes how the railways have benefited people and the planet throughout the pandemic – I've seen this for myself today at #Penrith station. @MAREKBIDWELL



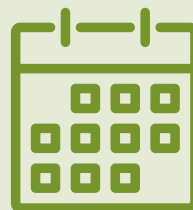
Delighted to see @iemanet taking forward action on #diversity in the #environment #sustainability profession. Our (UK) sector is shockingly white, near bottom of the league of professions. Looking forward to supporting action.



Also want to say that I still get a kick out of @IEMA_Transform magazine arriving 'naked'. Small but decisive bit of leadership. @PENNY_WALKER_SD



Some very colourful and interesting weekend reading arrived this morning #ethicalconsumer and @IEMA_Transform @GREENGINGER_UK



DATES FOR YOUR DIARY

iema.net/events

20 JANUARY 12.30PM–1.30PM

WEBINAR

Planning, licensing, and impact assessment in the marine environment

Uniting the energy of an organisation to drive positive wellbeing impact is at heart of the sustainability challenge. Dr Victoria Hurth sets out a model for decoding corporate organisations, and outlines some common deep-seated assumptions about how a company relates to the economy and society and whether they can successfully transition to being purpose-driven.

➤ Register at bit.ly/3784DR4

28 JANUARY 12.30PM–1.30PM

WEBINAR

Circular economy (CE) in practice: How to integrate CE principles into highways maintenance and road infrastructure projects

This webinar will provide an insight into the treatment and recycling operations implemented and trialled to produce usable materials and close the loop on highways waste. During this session you will gain:

- An understanding of the key challenges in implementing this CE approach
 - A case study of the application of this approach in Oxfordshire
 - Practical recommendations from experts in the sector, including local authority and supply chain perspectives on the value of these CE initiatives, the key factors facilitating implementation, and the challenges.

➤ Register at bit.ly/3fsoePT

3–4 FEBRUARY

CONFERENCE

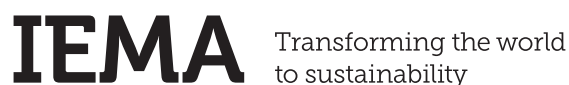
Trees, People and the Built Environment

This is a platform for greater understanding and exploration as researchers showcase their work in urban greenspace.

COVID-19 has exposed systemic weaknesses in our urban environments; it is critical that we should think differently. Urban foresters, landscaping professionals, architects, town planners, environment managers and others must come together to deliver against sustainable development targets. Now is the time to reflect on the role of urban trees so we can show they are part of an integrated urban system within a national and global ecosystem.

➤ Register at bit.ly/33r9k70

If undelivered please return to:
IEMA
City Office Park
Tritton Road
Lincoln
LN6 7AS



2020 What we've achieved

We believe in the power of sustainability to make a real and positive difference for individuals, businesses, communities, society and ultimately our planet. Together, through the knowledge and skills of experts we're transforming the world to sustainability.

Our year in numbers



3,348+
new members



18,839+
webinar
attendees



961,000+
visits to
iema.net



16,327
total members



227
corporate
partners



54
regional
events



55% increase
in e-learning
courses available



196
digital events