

TRANSFORM

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FOR ENVIRONMENT AND SUSTAINABILITY PROFESSIONALS

Aug/Sep 2023
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15



19

Green Careers HUB
SPECIAL ISSUE

- 20 News**
Welcome, awards and campaigns
- 21 Future of work**
Explore the Green Careers Hub
- 22 Upskilling**
The huge task to deliver a workforce to tackle net zero
- 24 Recruitment**
Changing employment patterns in the sector
- 25 Networking**
Platforms and tech start-ups tackling climate change

CONTENTS

Aug/Sep 2023

UPFRONT

- 04 Comment**
Sarah Mukherjee MBE ponders the importance of social science thinking in technological projects
- 05 News roundup and IEMA news**
Advice on making NTS reports more engaging, the green skills gap and understanding biodiversity net gain
- 09 IEMA Impact**
Amelia Woodley on collaborating to create a green skills agenda
- 10 IEMA Opinion**
We must put differences aside and work together to create a climate-friendly society, says Tom Pashby
- 11 IEMA Futures**
Chantelle Levy reports on scope 3 greenhouse gas emissions and how to tackle the problem
- 13 Legal brief**
The problem of disposable vapes, plus water pollution measures and compromises on retained EU law

ONLINE EXCLUSIVE

Bright lights, big effect
Tom Pashby on the impacts that illuminated digital displays have on the environment bit.ly/3DkGJTe

FEATURES

- 15 Interview: Anne-Marie Imafidon MBE**
Inspiring the next generation of women in STEM to change the workforce over the coming decades
- 27 Energy**
Why the road to net zero must be paved with expertise in the social sciences and humanities
- 28 Q&A: Paula DiPerna**
Is it possible to price ecosystem services in a way that adequately protects and enhances biodiversity?
- 31 Education**
Sian Toop on the importance of teaching primary school children about climate change
- 32 Recruitment**
Traceability in supply chains is rising up the corporate agenda. Is it time to recruit accordingly?
- 34 Agriculture**
Rick Gould investigates how transforming our diets can foster sustainable agriculture
- 36 Economics**
Degrowth, the alternative to economic growth at all costs, is gaining traction. Huw Morris reports

CONNECT

- 40 Community**
Ocean Action Conference and the progress of Pledge To Net Zero
- 41 Reading room**
Six of the latest books about the environment and sustainability
- 42 Career profile**
Meghna Das, head of international programmes engagement, UNICEF UK, and chartered environmentalist



28

Future fit

SARAH MUKHERJEE MBE, CEO, IEMA

Hello, and welcome to the latest issue of TRANSFORM magazine. When you are planning the electricity

demand for a country, what do you have to think about? Economic growth, transport infrastructure, renewable energy? Probably all of those things – but also the advertisement breaks for one of the nation's favourite soap operas.

I remember from my days as a BBC correspondent, interviewing someone from the National Grid (the organisation that manages the UK's energy delivery infrastructure). The grid needed to be resilient to a surge in demand caused by, for example, millions of people boiling the kettle for a hot drink in the middle of the popular UK soap, *Coronation Street* (water companies need to manage the same surge of demand). I was reminded of this conversation when I read Dr Rihab Khalid's thoughts on viewing science through a social science lens.

The case for social science thinking in technological projects may be an easier case to make within organisations – the case for degrowth is much harder. And yet, as Huw Morris has been finding out, many experts believe that the Global North has to prioritise degrowth strategies for a more equitable and resilient future.

As you know, we at IEMA believe that all jobs will, and should, be greener – our Green Careers Hub, launched in June, has hundreds of pages of jobs and advice, wherever you are on your professional journey. But, as Chris Seekings reports, there is still a big gap between the skills we need for the future, and the training structures we are developing today.

I hope you enjoy the fascinating articles in this edition; as always, we welcome your thoughts, comments and suggestions. Have a great couple of months and I hope to see many of you at our forthcoming events.

"At IEMA, we believe that all jobs will, and should, be greener – our Green Careers Hub, launched in June, has hundreds of pages of jobs and advice, wherever you are on your professional journey"



IEMA Transforming the world to sustainability

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.

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ROUNDUP

ENVIRONMENT &
SUSTAINABILITY
NEWS AND VIEWS

JOBS

CCUS industry may create over 70,000 new jobs

The UK's nascent carbon capture, utilisation and storage (CCUS) sector may create over 70,000 new jobs, and protect up to 77,000 jobs in carbon-intensive trade-exposed industries.

That is according to new modelling by the Carbon Capture & Storage Association (CCSA), which shows that Yorkshire and Humber, Wales and the Northwest of England have the most to gain.

However, the researchers warned that these benefits will not be realised without action to scale the CCUS supply chain and workforce, with the industry currently heading towards a "bottleneck in skilled personnel". They recommend that the UK ensures there are clear pathways for skills transferability from one industry to another, with information readily available on which skills are relevant for use in the CCUS sector.

More must also be done to upskill and retrain local communities, while retaining teachers in training positions is becoming problematic as many are retiring from the sector or being enticed by higher-paying industry roles.

Ruth Herbert, chief executive at the CCSA, said that overcoming these challenges will provide the "opportunity for the UK to access a multi-billion-pound global supply chain market for CCUS equipment, goods and services".

Read more about the research here:
bit.ly/3PWAmgh



SKILLS GAP

UK's green skills gap undermining net-zero target

Only a third of UK energy workers think they have the skills needed to adapt to the sector's low-carbon transition, a survey has uncovered.

The poll of over 1,000 energy workers also found that a quarter don't know how to access the training that will allow them to adapt to future changes in the industry. Furthermore, only 42% feel that businesses in the sector are ready to meet the target to decarbonise energy production by 2035, with just 42% believing the government is doing enough to support this change.

Of those working in the high-carbon energy sector, 60% believe the move to decarbonise the power system will put their jobs at risk by 2025. However, a whopping 91% are willing to consider a role in low-carbon industries.

This comes after the Skidmore *Independent Review of Net Zero*, published earlier this year, found that all sectors are facing skill gaps, with some having seen a 30% decline in skilled workers over the past three years.

Andy Moss, chief customer officer at City & Guilds, which published the latest research, said: "Many



employers have told us that uncertainty over the timing and scope of major energy projects inhibits their ability to invest in skills for the long term.

"We must unite to tackle this, with industry and government working to equip the energy workforce with the green skills required for the future. If we don't act now, we'll almost certainly lose the race to a more sustainable future."

Read the full findings here:
bit.ly/3XY9RsD

WORKFORCE

US clean energy workforce grows by almost 4%

The clean energy workforce grew by 3.9% in the US last year, adding 114,000 jobs nationally, and accounting for 40% of total energy jobs, the country's Department of Energy (DOE) has revealed.

Clean energy technologies, such as solar and wind, were responsible for 84% of net new electric power generation roles, while jobs related to zero-emissions vehicles saw nearly 21% growth.

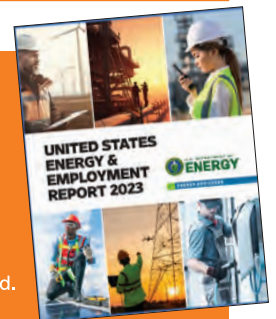
Although women make up just 26% of the energy workforce, they accounted for more than half of jobs added last year.

The findings also show that 30% of the energy workforce is under 30 years old, compared with the 22% national average. Only 17% of the workforce is older than 55, compared to 24% in all sectors.

Black or African American workers, as well as Hispanic or Latino workers, continued to be under-represented across the energy workforce.

US secretary of energy, Jennifer Granholm, said: "We expect to see steady growth of jobs to make and build a resilient and clean energy system, offering good-paying and secure employment opportunities to America's workers across the country."

Read the full findings here: bit.ly/3K4RaxY



GUIDELINES

Updates to traffic and movement assessment advice

In July, we published the long-awaited update and replacement of one of IEMA's first published impact assessment guidance documents from 1993, *Guidelines for the Environmental Assessment of Road Traffic*. The purpose of the new guidelines is the same as the 1993 version: to provide practitioners with good practice advice on how to carry out the assessment of traffic and movement of people as part of a statutory EIA or non-statutory environmental assessment.

The 2023 guidelines, *Environmental Assessment of Traffic and Movement*, bring IEMA's advice up to date based on the lessons learned over the past 30 years of impact assessment practice in the field, and provide the basis for systematic, comprehensive coverage for the assessment of traffic and movement impacts for a range of development projects. In addition to advice on traffic and movement, guidance is provided by experts leading impact assessments that have interactions with traffic and movement, including: air quality, noise, vibration, health, landscape, biodiversity, cultural heritage, climate and greenhouse gases.

The intended audience for these updated guidelines includes EIA practitioners, determining authorities and other stakeholders concerned with the assessment of traffic and movement impacts within the environmental assessment process. The new guidelines should be used by EIA practitioners working on projects in England, Wales, Scotland and Northern Ireland. The guidelines will also be useful to many international practitioners, particularly those applying the EIA directive, such as in the Republic of Ireland, as much of the advice is highly relevant and applicable to many international EIA regimes.

For more, see: bit.ly/3PRvRU2

GUIDANCE

New advice aims to make NTS reports more engaging

In June, IEMA published updated guidance on writing effective non-technical summaries (NTS) for environmental impact assessments.

Effective Non-Technical Summaries for Environmental Impact Assessment builds on IEMA guidance issued in 2012 on the same topic. In the intervening decade, large strides have been made in the use of technology and digital approaches to impact assessment, but these have not always filtered through to practice in the production of NTS. In fact, many of the issues raised in 2012, concerning failures to really focus on the quality and accessibility of NTS, have not always been heeded.

The new guidance will help NTS writers meet legal requirements and improve the quality, accessibility and functionality

of their NTS. These improvements will make an important contribution to improving access to environmental assessment reporting for the wider public.

The guidance is timely, given IEMA's recent responses to government consultations on the future of the environmental assessment regime in England and Northern Ireland. IEMA has called for expanded and improved provisions that provide access to information, public participation in decision-making and access to justice in environmental matters.

IEMA is hopeful that this new guidance will give practitioners the clarity, confidence and impetus to create high-quality and engaging NTS reports.

Visit www.yourmember.info/NTS-for-EIA for the full guidance

CONSULTATION

IEMA responds to government EOR consultation

IEMA responded in June to the government's consultation on the future of impact assessment regimes in England and Northern Ireland via its consultation on environmental outcomes reports (EORs). The aim of the EORs seems to be to replace the environmental assessment (EA) processes of strategic environmental assessment (SEA) and environmental impact assessment (EIA).

In consultation with its membership, IEMA developed two key tests: do the proposals seize the opportunity to improve EA, and will they introduce new weaknesses within EA and so lessen environmental protection?

Examining the consultation against these two tests identified a wide range of concerns and perceived weaknesses in the proposals. IEMA's conclusion was that it would be far better to modify and improve the existing regime of EIA and SEA than to start again with a new regime.

IEMA's concerns are listed in more detail in the consultation response. Taking all the concerns together, the overall message was clear from our members and other key stakeholders: there is a once-in-a-generation opportunity to improve the EA regime to increase environmental protection and outcomes for people and nature. However, the current proposals lack evidence-based research and stakeholder engagement.

On this basis, IEMA has called on the government to consider multiple recommendations, including the need to:

- Invest in training, skills and capacity to ensure there are enough competent experts in local authorities, regulators and statutory consultees engaged with the EA regime.
- Invest in knowledge management to develop and publish evidence-based research, policy and guidance on good practice in EA.

- Invest in better long-term and coordinated project- and plan-level monitoring to develop evidence on the effectiveness of assessment predictions, mitigation efficiency and environmental outcomes. Ensure that these lessons are then disseminated and acted upon by feeding back into screening and scoping decisions, to continually improve assessment techniques.
- Maintain the continued use of competent experts to carry out EA, as required by the existing EIA regulations.

- Expand and improve provisions that provide access to information, public participation in decision-making and access to justice in environmental matters.
- Adequately fund and increase the use of planning conditions, compliance monitoring, enforcement and remedy of non-compliance.

IEMA is committed to aiding policymakers in developing evidence-based policy using experience from experts.



Understanding biodiversity net gain

By Louise Dunkerley

Biodiversity net gain (BNG) is development that leaves biodiversity in a better state than before. In England, under the Environment Act 2021, delivering at least 10% BNG becomes mandatory for all relevant Town and Country Planning Act developments from November 2023. It will become mandatory for smaller sites in April 2024 and for nationally significant infrastructure projects in November 2025. Scotland and Wales have adopted their own approaches to net gain ('enhancement' and 'net benefit' respectively), where some of the principles of tackling biodiversity loss and improvement are similar but they have not adopted the same use of metrics.

Why is BNG important?

Biodiversity is the variety of life. We depend on it and benefit from it as a species, but our actions are also accelerating the decline in biodiversity

loss. More than ever, we need to help halt the decline and turn it into a net gain for the benefit of people, places, species and our planet itself. The global deal for nature at the UN Biodiversity Conference, COP15, in Montreal in December 2022 made the case for more urgent action and now, collectively, we need to respond to this.

The apex goal of the UK's 25-year environment plan is to improve nature so we can have 'thriving plants and wildlife'. BNG is a tool for achieving this. Successful delivery of BNG needs to link up with the principles of the Nature Recovery Network to make our habitats 'bigger, better and more joined up', as advocated in the Lawton Review. It needs joined-up thinking between developers, local authorities, landowners, local nature partnerships and other stakeholders to support joint priorities for nature. Fundamentally, implementing measures to deliver net gain successfully will increase the

quantity and/or quality of natural capital and therefore can deliver gains in ecosystems services.

What are the challenges?

Not surprisingly, there are many concerns and challenges in the implementation of BNG. One of the biggest challenges is how BNG is interpreted and applied; another is the shortage of resources for local planning authorities to deliver BNG, as well as a shortage of ecologists generally.

Application of the mitigation hierarchy is critical to the successful implementation of BNG. The challenge is to get this right and ask, for example, 'how nature-positive is this development going to be and can it meet or exceed the BNG requirement?'

Confidence in the BNG process will grow over time and the challenges will diminish through experience and sharing best practice.

Preparations for BNG

During the past year, the IEMA Biodiversity and Natural Capital (BANC) Steering Group has run a series of events on BNG to help IEMA members and practitioners prepare for it. We have created a *Biodiversity and Natural Capital Buzzword Guide*, which defines



BNG in action

Biodiversity Net Gain – Good Practice Insights has been developed to help provide practical examples of BNG, in practice, in England. It follows the BNG webinar series and summarises each case study presented, giving an overview of the project as well as details of the outcomes and challenges faced during the project, and tips and advice on specific tools and techniques used during each project. It highlights what worked and what was challenging and attempts to answer frequently asked questions under each of the BNG stages. It provides some great examples of partnership working. A list of useful resources for further information on BNG is also included in the paper.

BNG is both the start of and part of the rapid development of biodiversity-related policies, regulations and actions that environmental and sustainability professionals are having to adjust to. Although there are challenges, this is a great opportunity for us to act and make a professional contribution to the nature crisis by working to implement BNG successfully.

and explains key biodiversity and natural capital terminology. It was one of IEMA's most popular downloads last year.

In the first half of 2023, IEMA held a series of BNG webinars focused on the three stages of the BNG process:

- BNG baseline and design
- BNG implementation and stakeholder engagement
- BNG management and monitoring.

The output of these webinars has been put into a *Good Practice Insights* paper for practitioners and members.

To download a copy of *Biodiversity Net Gain – Good Practice Insights*, visit bit.ly/3DqPJ9j

The *Biodiversity and Natural Capital Buzzword Guide* is available at bit.ly/44W4PiE

LOUISE DUNKERLEY MIEMA CEnv is an associate director at Ecus and a member of the IEMA Biodiversity and Natural Capital Steering Group



IEMA CONNECT 2023



IEMA's member-exclusive global conference for environment and sustainability professionals is back! Join us at Connect 2023 on 20-21 September for a packed agenda on how to help facilitate collaboration and career advancement.

This year's three key themes are:

- Turning policy into action
- Transforming industry
- Advancing your career.

There will be opportunities to join interactive workshops and expert-led webinars on topics such as green skills, workforce development, sustainable business models, career advancement, legislation and more.

This year, we are delighted to provide networking face-to-face events at different locations worldwide on the evening of 20 September, along with interaction through our digital platform.

More information will become available in the next few days and weeks.

Book your **FREE** place today and join us to connect, learn and shape a sustainable future together.
www.bit.ly/3IAcKbD





OUR IMPACT

Lisa Pool spoke to Amelia Woodley FIEMA, an IEMA corporate partner, on collaborating to create a green skills agenda

In the third instalment in our series, I spoke to Amelia Woodley, ESG director at Speedy Services, who has worked hard to strategise her company's green skills development. She revealed how the company has used its IEMA corporate partnership and reports such as *A Blueprint for a Green Workforce Transformation* to integrate sustainability throughout the organisation.

Amelia joined the company two years ago to lead the environmental, social and governance (ESG) agenda. She explains the company's comprehensive strategy to develop green skills and its innovative approach to fostering sustainability within the workforce.

The logic and magic phases

The initial phase, or the 'logic phase', involved research and green skills development for the people making the decisions. Senior leaders within the company were educated in sustainability concepts to become well-versed in topics such as scope 3 emissions. Recognising the importance of developing green skills across the organisation, the next step was to drive meaningful change.

Transitioning into the 'magic phase', Speedy Services focused on engaging employees in the ESG narrative. Amelia emphasised the need to involve the entire workforce in order to implement its strategies effectively. Representatives from different business functions were selected as ESG business partners. They were given specialist training tailored to their roles, including sessions on climate change, modern slavery and biodiversity.

Upskilling employees and empowering them to address sustainability challenges within their teams was a significant aspect. By embedding green skills throughout the workforce, the ESG business partners acted as intermediaries between the core ESG team and the broader organisation. They facilitated knowledge-sharing, identified areas for improvement and collaborated with technical experts to drive change.

Career transitions

The company also recognised the untapped potential of career flippers – people in their 40s and 50s seeking purposeful career transitions. By offering them opportunities to switch to green roles, the company capitalised on their existing skills and provided training in sustainability. This approach ensured a diverse skill base and increased capacity to address future sustainability challenges.

Amelia's equation of 'logic' and 'magic' – combining strategy development with employee engagement – proved instrumental in the company's green skills journey. Its commitment to investing in both young people and career flippers demonstrated its dedication to building a sustainable workforce for the future.

Amelia also spoke about Speedy Services' corporate partnership with IEMA and how it

helps her stay informed about changes in the sustainability community. Her vision is to have all employees mapped to IEMA's framework and she is working closely with our team to realise this. Publications like *A Blueprint for a Green Workforce Transformation* influenced individuals within her organisation to take green skills seriously.

Valuable support

Speedy Services' approach to developing green skills is not only forward-thinking, it is essential in achieving its ESG goals. By empowering employees and creating a culture of sustainability, the company is well-positioned to navigate the challenges of the evolving business landscape while driving positive environmental and social impact. Working with IEMA has given the company the support and information needed to achieve this.

With more than 300 IEMA corporate partners, and over 600 downloads of the report, we know that IEMA's outputs are producing impact through the individuals who engage with services and published content to drive change. Our impact will always be down to our members and partners, and we look forward to seeing how the green skills agenda continues.



LISA POOL IEMA is IEMA's head of marketing.
AMELIA WOODLEY FIEMA (pictured) is ESG director at Speedy Services

While what makes a good climate campaigner is debatable, we must work together to create a climate-friendly society, writes **Tom Pashby**



The acceleration of climate breakdown is drawing more people into the climate movement. I mean that in the broadest possible sense. That doesn't just mean signing up to a climate campaign mailing list. It definitely does mean growing public consciousness of the link between human actions and the decreasing habitability of our planet.

As I write this, the top two stories about the climate movement in the UK in the past week have been a high-profile cricket match disrupted by Just Stop Oil protesters, and the veteran environmentalist Lord (Zac) Goldsmith resigning from the government as a minister, citing apathy towards climate policy.

Some may balk at my inclusion of Lord Goldsmith as a member of the climate movement. He may prefer a less activist term, but I think it's important to be open-minded about how we conceive of the community of people working to avert climate catastrophe.

There has never been a broader coalition of actors within the climate action movement. We face dichotomies of insider versus outsider, and violent versus non-violent. There's little chance of us all agreeing on what makes a good climate campaigner. That shouldn't stop us from being supportive of a wider variety of types of climate action beyond those we are personally comfortable with.

Most of us want the same thing – to deliver a healthy, safe environment within which we can all thrive. Today we live in a world that has been artificially heated 1.2°C above average temperatures since the Industrial Revolution by a relatively small number of people burning vast amounts of fossil fuels.

That heating has already wrought devastation in many parts of the Global South and increasingly in the Western world too. It will be disastrous if we don't come together to work towards a less dangerous future now, and one way we can help the situation is by all of us being more receptive to forms of climate action that are alien to us.

Too often we fall into the politics of division. I'm not sure whether this is something that's been around for a long time, or whether it's a symptom of the post-Brexit political landscape or the result of rising levels of fascism around the world in recent years. People aren't born with entrenched opinions and we don't have time to wait for generational shifts in thinking, because we have years rather than decades to change the fate of the planet.

People engaged in clandestine direct action, those working for government ministers on climate policy,

entrepreneurs taking risks to develop new types of cleantech and activists turning up on marches all have important parts to play in the process of creating a climate-friendly society.

I'm not saying that people involved in climate action can do no wrong. We should all hold ourselves responsible, including via both noisy protest and quiet diplomacy. In a perfect world, we would hold one another to account and be able to listen to and respond to criticism in a more sensitive way.

We should be most interested in the effectiveness of action, rather than the strategies and tactics we use to get there. That means we should all consider whether the way



“We should be most interested in the effectiveness of action, rather than the strategies and tactics we use to get there”

we're trying to act on climate is the best for where we are individually and institutionally. It means assessing our relationships and our access to power.

The variety of types of climate action is likely to get broader as we see more extreme weather events, disruption to our daily lives, and more injuries and deaths related to the climate emergency. As more people join us, it's important that the climate movement gives itself the space to experiment and innovate.

TOM PASHBY **AIEMA is a digital journalist at IEMA**

IT ALL ADDS UP

Chantelle Levy reports on scope 3 greenhouse gas emissions from purchased goods and services and how to tackle the problem

Scope 3 emissions are indirect emissions in a company's supply chain. The Greenhouse Gas (GHG) Protocol's Corporate Value Chain (scope 3) Accounting and Reporting Standard groups scope 3 emissions into 15 categories, of which purchased goods and services are category 1 (S3C1). This category includes all upstream GHG emissions from the production of products purchased or acquired by a reporting company, including goods (tangible products) and services (intangible products).

The impact of S3C1

Typically, purchased goods and services represent a significant portion of an organisation's overall GHG emissions. In terms of total scope 1, 2, 3 emissions in the following sectors, they account for 63.35% in the agricultural commodities sector, 43.97% in chemicals, 29.59% in construction and 67% in food, beverages and tobacco. The magnitude of emissions in this category highlights the need for accurate measurement and reporting of S3C1 emissions. Moreover, regulatory frameworks, along with the UK's commitment to achieving net zero by 2050, emphasise the imperative for organisations to understand and report on all scope 3 categories.

The initial step for organisations regarding S3C1 is to understand, calculate and manage their emissions. It is then through implementing sustainable procurement practices and engaging with suppliers that organisations can obtain the most accurate representation of their data and take action to reduce emissions.

Data management

The GHG Protocol provides guidance on calculating S3C1 emissions. The most accurate forms of data collection are the 'supplier-specific' and 'hybrid' methodologies, which require the



reporting company to collect product-level data from its suppliers. This necessitates obtaining environmental data from suppliers, and thus is contingent upon the suppliers' reporting practices.

If product-level data is not available, 'average-data' or 'spend-based' methods, which involve using either the mass or the economic value of goods and services purchased, are used.

Therefore, it is crucial for organisations to establish a procurement system that organises purchased goods and services. This system will enhance transparency and streamline operations, enabling organisations to have purchase/product records for all goods and services.

Sustainable procurement

To reduce S3C1 emissions, organisations must incorporate sustainability considerations into their procurement processes through supplier selection, where preference is given to suppliers with commitments to reducing GHG emissions. Organisations should also consider factors such as supplier location, transportation methods and packaging.

By implementing a procedure governing the sustainability standard of

new suppliers, and in the evaluation of existing suppliers, organisations can reduce their S3C1 emissions.

Supplier engagement

Collaboration is needed to encourage suppliers to understand, calculate and report their emissions, and support efforts to reduce emissions.

In 2022, only 10% of companies were comprehensively reporting on their carbon emissions, according to management consultancy Boston Consulting Group. As a result, encouraging suppliers to report emissions is likely to be the initial obstacle for organisations to overcome. If successful in doing so, organisations will be able to switch from generic spend-based data collection to more accurate supplier-specific methods and ensuring suppliers become better educated in the emissions calculation process.

Engagement empowers the reporting company to support suppliers in adopting greener practices and developing emission reduction goals. The proactive stance towards supplier engagement is gaining momentum, as demonstrated by Tesco's implementation of a sustainability-linked supply chain finance programme. Additionally, the Science Based Targets initiative has released guidance for developing and achieving scope 3 supplier engagement targets.

As a sustainability consultant, the influence of S3C1 emissions highlights the importance of working with clients to help them understand, measure and reduce these emissions. We ensure our clients are equipped with scope 3 data management and reporting platforms, procurement systems and responsible procurement strategy documentation to enable them to manage and reduce their S3C1 emissions.

CHANTELLE LEVY AIEMA is futures and sustainability consultant at CGI, and a member of IEMA Futures

NAVIGATE-ENVIRONMENT

Your new IEMA membership benefit

As environmental compliance and new legislation expands across the globe, sustainability professionals will need quick and direct access to all the latest regulatory information and advice.

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This exclusive new member benefit offers two levels of access:

- **NAVIGATE-ENVIRONMENT LITE**
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FREE ACCESS TO IEMA MEMBERS

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Visit iema.net/navigate-environment-iema-members to find out more. Once registered, you can access the **Navigate-Environment Lite** platform through MyIEMA.

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From government compromises on retained EU law, to disposable vapes, **Neil Howe** provides an update on the ever-evolving world of environmental legislation

Retained EU law act

The Retained EU Law (Revocation and Reform) Act 2023 has now been published. It is a controversial area and genuine concerns were raised over earlier drafts regarding the scrapping of crucial environment and safety laws. The Act has been watered down and replaces the originally proposed 2023 sunset date with a list of legislation that is revoked at the end of 2023. The list contains around 600 pieces of legislation as opposed to the estimated 4,000+ that were originally in scope and is largely made up of legislation that is burdensome and duplicative.

🔗 cedr.ec/92w

ESOS deadline extended

Phase 3 of the Energy Savings Opportunity Scheme (ESOS) is due to end this year, which means those who are part of the scheme must confirm their compliance with it by 5 December 2023.

However, the government had planned to make several changes to ESOS through legislation from Phase 3 onwards. These changes were proposed in a July 2021 consultation, with their intentions set out in a formal response in July 2022. With the legislation not finalised and the compliance deadline approaching, the deadline for Phase 3 has been extended to 5 June 2024. This will allow participants to meet the new requirements and for assessors to carry out assessments.

🔗 cedr.ec/927



Single-use plastics

Following a consultation in November 2021, draft legislation has been produced in England that will restrict the supply of single-use plastic plates, bowls and trays. The Draft Environmental Protection (Plastic Plates etc. and Polystyrene Containers etc.) (England) Regulations will also ban the supply of single-use plastic cutlery, balloon sticks and expanded and foamed extruded polystyrene (EPS/XPS) food and drink containers, including cups.

🔗 cedr.ec/928

Across the border, Wales has launched similar legislation to restrict the sale and supply of single-use plastics. The Environmental Protection (Single-use Plastic Products) (Wales) Act 2023 will apply to things like cutlery, plates, straws, balloon sticks, polystyrene food containers and thin plastic single-use bags.

🔗 cedr.ec/929

NEIL HOWE PIEMA is head of writing at Barbour EHS

ON THE WATCHLIST

Several notable consultations have also been carried out, which may result in changes to legislation in the near future.

Improvements to reporting

A review has been carried out of the costs and benefits of the **non-financial reporting requirements**, which also looked at the value of the information produced and how the reporting regime might be improved in the future.

Non-financial reporting includes information on environmental matters, company employees and social, community and human rights issues, including information about any policies of the company in relation to those matters and their effectiveness.

🔗 cedr.ec/92b

Water pollution measures

Defra has consulted on an expansion of the **Storm Overflow Discharge Reduction Plan** to include coastal and estuarine waters, to further address the impact of storm sewage overflow discharges across England that pollute the rivers and the sea because of a lack of appropriate investment and maintenance by water companies.

🔗 cedr.ec/92c



Vape waste

Ireland is the latest country to look into **disposable vaping devices**. There are emerging concerns around the disposable devices, which have been linked to issues including litter, plastic and hazardous waste and fire risk. This follows on from environmental impact reviews in England and Scotland recently.

🔗 cedr.ec/92a

IN COURT

A series of waste cases have dominated recent prosecutions, with four men sentenced, including two jailed, following the operation of a Skegness waste site where materials were being stored illegally and in contravention of an environmental permit. 🔗 cedr.ec/92d Lastly, an appeal in *Jalla v Shell International Trading and Shipping Co Ltd* against timings to amend pleading in an offshore oil spill claim has been dismissed. 🔗 cedr.ec/92e

HOW FUTURE-LOOKING BUSINESSES ARE TRANSFORMING ENVIRONMENTAL TRAINING

Sustainability expert at Make UK, Dr Waleed Montasser talks about trends in environmental training and his career advice.

Have you seen an increase in demand for environmental training recently?

Certainly! At Make UK, we've seen a 206% increase in demand for environmental training between 2021 and 2022.

We're speaking with an increasing number of individuals working in specialist environmental roles, including climate change, carbon, and corporate social responsibility (CSR). Make UK are the only provider of the IEMA Diploma in Sustainable Business Practice in the world and we're seeing an increasing number of ambitious and passionate learners completing this course (a 148% uplift between 2021 and 2023). More and more learners are seeking our support with their professional development.

In addition to demand for our professional level courses, we're also witnessing organisations invest in company-wide environmental training. Although sustainability is starting to filter through, sometimes there is a gap in knowledge and enthusiasm in roles that are not environmentally focused. Training can definitely help to bridge this gap.

How would you explain this change?

I think there has been a shift in businesses that are not just looking to meet regulatory requirements but actively want to build environmental management into their culture. This is not only because of the moral imperative, i.e. it's the right thing to do, but also to ensure they're future ready. Increasingly organisations are seeing the benefits of environmental management to drive innovation, become more efficient and resilient, whilst reducing costs and protecting the environment. We've also seen specific examples of businesses facing increasing energy costs, partly as a consequence of the Ukraine Russian conflict, which has brought forward sustainability goals. Supported by Make UK, businesses are not only considering current needs but looking to manage a volatile future.

What advice would you give to someone starting a career in sustainability?

I think it's important to connect with like minded individuals. You should not underestimate the value of learning from the experience, both successes and failures, of other individuals and businesses. I find it fascinating how great ideas can come from a discussion between individuals who have never met before, that work in completely different companies in entirely different sectors.



We're speaking with an increasing number of individuals working in specialist environmental roles

At Make UK, we've seen a 206% increase in demand for environmental training between 2021 and 2022.

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A GUIDING LIGHT

IEMA CEO Sarah Mukherjee MBE talks to **Dr Anne-Marie Imafidon MBE** about inspiring the next generation of women in STEM careers, and how the workforce is set to change over the coming decades

Maths genius, former *Countdown* presenter, tech entrepreneur and diversity champion, Anne-Marie Imafidon's talents are difficult to match. She was a child prodigy, passing two GCSEs in different subjects at primary school, and the youngest female ever to pass A-level computing at the age of just 11.

Today, she spends much of her time inspiring the next generation of women in science, technology, engineering and maths (STEM) careers as the CEO of Stemettes, which has helped tens of

thousands of girls realise their potential in these subjects.

Imafidon is also a trustee at the Institute for the Future of Work and knows more than most about the trends that are set to uproot the workforce in unprecedented and potentially frightening ways.

Here, she highlights the key role that women will play in a greener economy, how technology will help deliver net zero, and what will be needed to ensure positive outcomes for all workers amid the unrelenting march of artificial intelligence (AI).

Early recognition

Imafidon was born to Nigerian parents in Barking, east London. From a very young age – she is still just 33 – it was obvious that she was different from her classmates; capable of grasping mathematical concepts far more quickly than her peers.

"When I was taught something, I would get it first time," she explains. "I would often ask, 'Why are we going over this again? I don't want you to just repeat what I've already heard. There's got to be more exciting things we could

Interview

be studying. What if the number on top of the fraction was bigger?"

After several frustrating discussions with teachers, the head of numeracy at her primary school in Walthamstow suggested accelerated learning. "I was bouncing off the walls – I thought I could be like my cousins, who are four years older than me!" She would go on to pass GCSEs in mathematics and ICT before leaving primary school. "I was as shocked as everybody else was when I passed on results day, so that self-confidence wasn't precocious."

Imafidon was just 20 years old when she received her master's degree in mathematics and computer science from the University of Oxford, and was well aware of her unusual background.

"I'm often the youngest, Blackest, female person in the spaces that I end up in, and when you go somewhere like Oxford, there are certain things that make you feel different," she explains. "I was really privileged, and I was never made to feel like the only girl but one of my tutors was the senior fellow for the Oxford University bell-ringing society, and I remember thinking, 'I'm the odd one out here because I don't know what the bell configurations are.' It wasn't my youngness, Blackness or femaleness that would be the alien part of me, it was the non-bell-ringing-ness!"

Recognising talent

Imafidon credits her parents and teachers for helping her to realise her potential, and for not dismissing her high energy and enthusiasm as behavioural problems. "I was lucky I didn't have a brother for my parents to say, 'No, that's for your brother to do, not for you,' and lucky my teachers didn't expel me for constantly telling jokes and talking to my friends because I was bored in maths lessons," she explains. "There is a responsibility for all of us to keep our eyes open and be vigilant to not blocking those young children."

Not that all her teachers and colleagues have always been supportive – far from it. Imafidon recalls one experience in secondary school when she was discussing her ambitions with one of the school heads and said that she would like to apply to Oxford University. "She threw her head back and laughed at me, and said

'No chance, that's not something we are going to suggest for you.'" On another occasion, she was working with a male colleague on databases, and suggested a solution that would render his solution useless, leaving him gobsmacked. "He was looking for the hidden camera, thinking he had been pranked, because this little Black girl from east London couldn't know more about the database system than him, and that his solution was not going to be useful. I sometimes wonder if those experiences were a challenge for me, or a challenge for that male colleague, and for that school head, because I still went to Oxford."

Closing the skills gap

Such formative experiences certainly drive Imafidon's passion as CEO of Stemettes, an award-winning social enterprise working to engage, inform and connect the next generation of women and non-binary people in STEM subjects. More than 50,000 young people have attended events, workshops and

"If you want more people to come inside the profession, then create more doors"

Stemettes experiences for free across the UK and Ireland since it was launched in 2013, and 95% of attendees have had an increased interest in STEM subjects after just one event.

"We don't pre-select, we don't check grades or ask you any questions as you're applying," Imafidon explains. "If you are available, we'll pay for the train ticket, pay for your food, and if a parent needs to come with you because of your age, we'll pay for them to come too."

Workers with expertise in STEM subjects will play a key role in the net-zero transition, with numerous career opportunities across the economy, whether that's developing cleaner transportation alternatives, such as electric vehicles, hydrogen fuel cells and biofuels, helping to boost renewable energy capacity, or informing

policy-making on ecosystems and conservation. However, a report from EngineeringUK last year suggested that the UK could be "sleepwalking towards a net-zero skills shortage", warning that there is no "consistent understanding of the future demand for engineering and technical skills needed at a national level to meet net-zero targets by 2050".

Narrow entry routes

Sadly, the sustainability profession also has a diversity problem, with research released last year – co-funded by IEMA – revealing that just 4.8% of environment professionals identify as Black, Asian or minority ethnic, compared with a 12.6% average across all professions.

Imafidon says: "This should be a renaissance era for the profession, because so many people care about the issues and are really worried as well, but we have missed out on so many folks, so much talent, so much passion, by having a very narrow set of entry routes. If you want more people to come inside the profession, then create more doors."

She adds that, as with other professions, businesses must employ equitable practices in their recruitment, promotion and retention policies. "You must value different skill sets, backgrounds, perspectives and so on, because we are missing out on that cross-disciplinary and interdisciplinary approach that could help us get where we need to be faster. And if you do manage to recruit them, make sure that you're retaining them properly by paying them properly, and having policies that support and recognise their differences. The final one is promotion, recognising their value and that they can be part of the leadership in your organisation, so you go full circle and really get the benefit of that diversity."

Thankfully, IEMA research suggests that the sustainability profession is becoming more diverse, particularly among younger people, and is likely to look very different in the coming decades.

Another trend that looks set to upend all professions is the rise of AI, and there are serious concerns that these technologies could have unequal outcomes for women. Analysis by the University of North Carolina's Kenan-Flagler Business School this year found that 79% of women –



"What excites me about chatbots, AI, big data ... is that these tools can be applied to the problems we are trying to solve"

nearly 59 million – are in occupations susceptible to disruption and automation, compared with 58% of working men.

Bring in guardrails

To avoid adverse outcomes, Imafidon says we must start with regulation. "When we replaced horses with cars, it was carnage, because we didn't have a Highway Code. Then we said, everybody drive on the same side of the road to make it safer. We don't have that yet for ChatGPT, but we need to bring in some of those guardrails. The Institute for the Future of Work has free resources and membership that you can join to stay on top of the issue."

At the same time, she believes these technologies can play a key role in helping to tackle the climate and environmental crises. "What excites me about chatbots, AI, big data, blockchain and whatever else, is that these tools can be applied to the problems we are trying to solve." Similarly, she thinks that technological solutions to the climate crisis, such as negative emissions technologies, are key to averting further environmental breakdown.

"If you've got a set of tools, I don't know why you wouldn't want to make most use of them, and there's a lot of scope for improvement," Imafidon concludes. "I have hope that future sustainability will be possible with these tools, an interdisciplinary, broader approach, with a more open mind and a more diverse set of people solving these problems."



**COMING SOON:
2-PART PODCAST
EXCLUSIVE**
Sarah Mukherjee MBE
in conversation with
Dr Anne-Marie
Imafidon MBE

"You must value different skill sets, backgrounds, perspectives and so on ...[to] get where we need to be faster"



GOING THE DISTANCE



Nicholas Turnbull, HSES&S manager at Akzonobel, shares his experience completing his IEMA Certificate in Environmental Management by Applied Learning (PIEMA), through distance-learning provider Charburn Consulting

Like many busy working professionals, time is short and I wanted to complete my PIEMA Environmental Certificate in my own time, on the job. Doing so via a distance-learning course was a great option for me as it meant I didn't have to take time away from work to travel anywhere. I could go at my own pace and work around work commitments, while still accessing one-to-one advice and guidance from a qualified assessor when I needed it.

The applied learning approach meant no exams and enabled me to use existing work-based evidence to demonstrate my knowledge and skills.

The introduction to the course programme was good. My assessor, Lynn Thompson, came to the Akzonobel plant at Ashington, and talked me through the course requirements before I began.

Once the course was underway, Lynn was great at guiding me through the course at every stage, explaining what was required and to what level. It helps

to have a good working relationship with your assessor and Lynn was very easy to talk to and gave advice when and where it was needed. She was always supportive and responsive, and only ever an email or phone call away, providing me with timely, constructive feedback.



The e-portfolio online platform used for submitting assessments was really straightforward. The ability to upload large documents was particularly pleasing and made supporting the written submissions quick and easy.

Overall, I had a great experience during the course. I'm glad I had Lynn and Charburn in my corner for support when required. This is the second distance-learning course I've done – the other was with an alternative provider – and this has been by far the better experience. A really good learning programme throughout.

After 120 hours of study, I'm delighted to become an IEMA Certified Practitioner. The course has helped me not only develop my own skills and experience, but deliver an approach to environmental management that supports Akzonobel's strategic business goals and reflects our commitment to the very best environmental practices. It's also provided me with a stepping-stone to the IEMA Diploma in Sustainable Business Practice.

Charburn

Charburn Consulting offers the only IEMA Certified distance-learning courses in Environmental Management by Applied Learning (PIEMA) in the UK. For more information, email Lynn Thompson: info@charburn.com.



New horizons

What does the future hold for you?

 **Green
Careers** HUB

www.greencareershup.com

IEMA

Transforming the world
to sustainability

'All jobs can be greener'



In April 2022, I joined IEMA to focus on careers and education in sustainability, and to lead the development of a new online careers platform with a vision that all jobs can be greener. One that is designed to support any sector or background and informs users on how they can understand and play a role in greening the economy.

Therefore, I am thrilled to introduce you to the next phase of the IEMA Green Careers Hub. The aim of the site is to give individuals relevant and up-to-date information and become a one-stop shop for green careers advice, services and jobs. We hope it will inspire all generations to make the relevant choices and progress in their careers, and drive the change needed towards a more diverse profession.

The Green Careers Hub has been a collaborative effort from the start, and I want to take this opportunity to thank our partners, members and the steering group, who have all supplied valuable input and support throughout the development process. The passion of everyone involved has been inspiring.

With more than 100 pages of green careers information and content, it is well worth a browse for wherever you may be in your career journey. My highlights include the job profiles, sector pages and case study videos.

And this is just the beginning. We will continue to add content to the hub and are planning to undertake research in other areas where we can develop further. Our recent announcement about partnering on the Pearson Edexcel Level 3 Extended Project Qualification (EPQ) focused on sustainability or climate change is just one new, exciting project and we hope to do more work in the education sector in the future.

The Green Careers Hub is a vital space that will bring individuals, organisations and educational institutions together.

If you would like to get involved, by providing a career story, job profile or sector page, please do get in touch at info@greencareershub.com.

Rebecca Turner
Career pathways manager at IEMA

IEMA AND DELOITTE GREEN SKILLS AND JOBS REPORT UP FOR BIG AWARD

Last year, in partnership with Deloitte, IEMA published a report and toolkit to help organisations prepare their workforces for the green economy of the future. This was part of our 'all jobs greener' campaign.

A *Blueprint for Green Workforce Transformation* sets out how UK climate and environmental policy is driving a more sustainable approach to business and, as a consequence, green skills and jobs are increasingly sought after.

The report is accompanied by resources that enable organisations to assess the extent to which their workforces are 'green' and to take steps to transition teams to a more sustainable footing.

More than a year after its publication, the report has

been recognised by the prestigious MCA (Management Consultancies Association) Awards 2023, with the work shortlisted in the thought leadership category.

The MCA Awards were created over 25 years ago to celebrate the positive impact that consulting has on the private and public sectors, alongside its wider value to society.

The awards ceremony will take place in October.



IEMA COP28 SKILLS CAMPAIGN

In the build-up to COP28, which this year takes place in the United Arab Emirates, IEMA is campaigning for greater recognition of the role of skills in the United Nations Framework Convention on Climate Change process.

The Institute would like the agreements that are reached at COP28 to reflect the need to invest in and develop a global workforce that can tackle climate change head on.

Specifically, our campaign is targeting the COP28 cover text. This is the record of high-level decisions that will be reached at the negotiations taking place in November and December.

There has been little to no reference to skills and workforce development in the

cover text documents of previous COP events.

We are asking for a decision that urges countries to think far more strategically about their workforces and the part green skills and jobs must play.

During the Bonn Climate Change Conference (which takes place before COP each year), IEMA put on a fringe event setting out its campaign aims. We intend to hold other such events in the run-up to COP28 as well as sessions at the negotiations themselves.

Our approach to COP28 reflects much of the work that we have been doing domestically to embed the importance of green skills and jobs into the mainstream psyche.



Reimagining the future of work



Green skills are needed to power the green economy across many industries, roles and geographical regions.

IEMA's Green Careers Hub, a brand-new government-backed resource, aims to provide insight into the green jobs of the

future. Whether you are about to enter the workforce or are an experienced professional looking to change career, it features a wealth of information for anyone looking to find out more about green skills, green jobs and potential career pathways.

IEMA invites everyone to use this hub, whether at school, college, university, in work or looking for a job or career change. We encourage you to become part of tomorrow's workforce for a cleaner, greener future.

Explore

Live jobs

Search current job listings in environment and sustainability across all sectors and find the right green role for you today.

www.greencareershub.com/find-your-green-role/live-jobs

Case studies

The video series offers a glimpse into inspiring individuals and organisations working across a range of sectors, providing first-person insights into their daily lives and motivations, as well as their advice to others looking for similar roles.

www.greencareershub.com/find-your-green-role/organisation-case-studies

Job profiles

As titles and responsibilities differ across organisations, we provide a list of example roles that support our green future.

www.greencareershub.com/find-your-green-role/job-profiles

Career stories

IEMA members may be at different stages of their careers, but they are all passionate about the environment and working towards a more sustainable future. Here are some of their inspirational stories.

www.greencareershub.com/find-your-green-role/iema-member-career-stories

Maddy Diment
Lead researcher,
Tortoise Media

"We need to make sustainability a really compelling story that people are on board with and understand."

bit.ly/433IXR4



Oluwaseun Johnson
Volunteer, IEMA North
West Regional Group

"As an entomologist and beekeeper, I look beyond honey and other hive products into the social, symbiotic and environmental aspects and impacts of bees."

bit.ly/43YHjBP



Richard Carter
Lecturer in accounting,
finance and
sustainability,
West Suffolk College

"The link with finance was obvious to me: accountants are used to quantifying and reporting, but sustainability management is also about minimising risk, building business resilience, ensuring best efficiency, and reducing operating costs."

bit.ly/3Nu4s89

For more member profiles, go to www.greencareershub.com

Mind the skills gap

The UK faces a huge task upskilling the workers it needs to deliver net zero by 2050.

Chris Seekings reports on the key challenges, solutions and opportunities

Earlier this year, the Climate Change Committee (CCC) revealed that up to 725,000 net new jobs can be created by the UK's net-zero transition, providing huge employment opportunities in economically deprived areas, and boosting diversity in sectors where women and ethnic minorities are under-represented.

However, there is often a lack of clarity that amounts to "magical thinking", when it comes to how these jobs are going to be delivered, according to IEMA CEO Sarah Mukherjee MBE. The CCC has also warned that options for developing the net-zero workforce are "not being considered systematically across government".

Aside from the urgent environmental needs, delivering well-paid green jobs and training could have massive economic benefits, and help tackle the social and political unrest that has been bubbling away in the UK for decades.

Scale of the challenge

IEMA's new Green Careers Hub will go some way to help, providing businesses and individuals with all the information they need on green skills and career pathways in one easy-to-use resource.

Nonetheless, the UK still faces a "huge challenge", according to the Skidmore Independent Review of Net Zero, which states that skill pools "will need to grow significantly".

Post-Brexit immigration changes and knock-on effects from the Covid pandemic have not made this any easier. All sectors are struggling, with some having seen a 30% decline in skilled workers over the past three years, and up to half experiencing recruitment challenges.

These challenges are particularly acute in less affluent areas, with vacancies for low-carbon jobs often located outside London and the South East (see Figure 1). This also presents a huge opportunity.

Overall, the Confederation of British Industry estimates that green jobs could

contribute up to £60bn of gross value added to the UK economy by 2050 and numerous studies show that the potential rewards far outweigh the costs. There are also a great deal of possible social benefits.

Many of the constituencies that have felt left behind in recent decades and voted for Brexit have the greatest potential for green jobs. For example, the north of England, the East Midlands, and Yorkshire and the Humber are home to 16%, 9% and 21% of energy-intensive manufacturing workers, respectively, who can be upskilled for the low-carbon transition.

Opportunities in environmental development, such as tree planting and urban green infrastructure, exist in the 20% of British areas facing the most significant employment challenges, while there is also massive potential for job creation in carbon capture utilisation and storage and low-carbon hydrogen in Merseyside, Humberside, Scotland and South Wales.

And it's not just carbon-intensive sectors that are ripe for change, with 75% of senior sustainability professionals surveyed for a report by IEMA last year saying that all jobs will require 'green' or sustainability skills by 2050.

"Environment and sustainability specialists are now working in a far broader spread of organisations than they did in the mid-2000s, and there is a broader set of skills involved," explains Paul Gosling, a recruiter at Hays, one of the Green Careers Hub partners. "The type of people involved in the early stages were almost entirely engineers and scientists."

Upskilling will be required across the UK's service-based economy, and new jobs could be created in sectors traditionally dominated by certain sections of society.

The future workforce

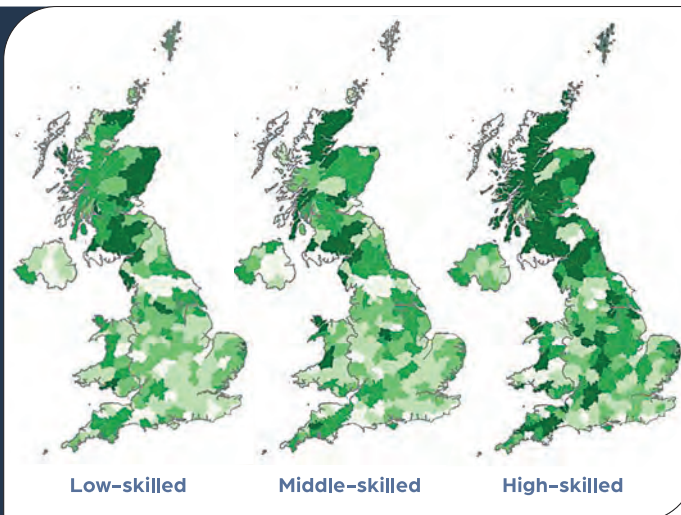
The Skidmore review revealed that approximately 82% of employees in net-zero industries are male and that just 18% are female. Meanwhile, research released by SOS-UK and IEMA last year showed that just 4.8% of environment professionals in the UK identify as Black, Asian or minority ethnic, compared with a 12.6% average across all professions.

New green jobs and training can help address this imbalance: taking advantage of a huge pool of untapped talent, while ensuring that a diverse set of perspectives are included in the net-zero transition. Initiatives such as The RACE Report and

Figure 1:
Spatial distribution of low-carbon vacancies at different skill levels

Share of low-carbon ads

- 0% to 0.6%
- 0.6% to 0.9%
- 0.9% to 1.1%
- 1.1% to 1.5%
- 1.5% or more



SOURCE: MISSION ZERO, INDEPENDENT REVIEW OF NET ZERO BITLY/44WCJCB



New jobs, training and support are needed to encourage more diversity in the environment and sustainability sector



IEMA's Diverse Sustainability Initiative will help. Speaking last year, IEMA's CEO said: "As a British Asian, I know how important it is to address systemic inequality and the real need to reflect the diversity of this country. We must continue to gather data and offer our support and encouragement to people who wish to join our sector but feel they don't belong."

Learning from the past

Of course, there is a risk that the net-zero transition could be negative for some workers and sectors, with the UK's shift from coal and steel in the 1970s and 1980s characterised by abrupt business closures in areas of concentrated regional employment.

However, the pace of change will be more gradual, and there are reasons for optimism, with the UK having successfully cut its emissions by 48% between 1990 and 2021 – faster than any other G7 country – while growing its economy by 65%.

To ensure a smooth transition, and to give businesses time to respond, the government must give more clarity on its long-term aims.

Indeed, the Skidmore review found that the main barrier to creating a sufficiently skilled workforce is "confidence in existence and longevity of jobs". This was followed by access to and affordability of skills provision, the training and retraining skills pipeline, and a parity of esteem for entrants into trade vocations. The Department for Work and Pensions – another Green Careers Hub



partner – sits on the UK government's Green Jobs Delivery Group.

A spokesperson tells me: "We are ensuring that other departments and industry is doing everything in its power to overcome barriers preventing jobseekers from taking up roles in green sectors. This includes work coach interventions and targeted provision, including sector-based work academy programmes, and by referring people to skills bootcamps, apprenticeships and other skills provision."

Long-term government support for net-zero technologies will also give employers the confidence they need to invest in training. However, higher education, training providers, professional bodies and recruiters have an important role to play, too.

"Recruiters can add real value by connecting workers to the different types of companies that are looking to recruit and train, and providing that contextualisation of sustainability issues to business scenarios," Gosling adds.

The global race

The US Inflation Reduction Act and the EU's proposed Green Deal Industrial Plan have increased the risk to competitiveness of the UK, which could miss out on new opportunities by not supporting the skills needed to attract investment.

"To see the amount of climate action happening in the US, compared with just five years ago, is astounding," explains Anshuman Bapna, founder of Terra.do, another partner of IEMA's Green Careers Hub. "We went from having a climate denier-in-chief as president, to having both parties talking about whose Green New Deal is better."

That's not to say that the US does not face its own challenges. "We have a massive shortage of engineers, and don't have enough people to install new heating systems, or electricians and plumbers," Bapna says. "But the fact that America turned the ship around politically so quickly gives me a strong sense of optimism."

All countries face challenges as we look to build a workforce capable of averting the worst impacts of climate change. Alongside launching its Green Careers Hub, IEMA has called on delegates at this year's COP28 climate summit to include more support for green skills on the cover text.

"This shift simply will not happen quickly enough unless we equip the global workforce with the skills and training necessary for it to happen." Mukherjee said earlier this year. "A clear declaration of intent at COP28 would be a great way to start."

A new era for recruitment

Tom Pashby examines the changing employment patterns for the sustainability sector



Many of us, especially newer entrants into the sector, might think that a significant proportion of the business community has always taken its environmental and sustainability-related responsibilities seriously. This, of course, is not true. Climate science only reached maturity in the latter half of the 20th century. As public and business awareness of the importance of being environmentally responsible has grown over the past 30 years, recruitment into the sector has changed dramatically.

Today, many candidates for entry-level environmental roles have an undergraduate degree, a master's, perhaps an internship during university summers or involvement with relevant student societies. The volume of people undertaking postgraduate education has also grown markedly over the past 15 years, from approximately 300,000 in 2006, to around 500,000 in 2022.

Yet this is not a simple story of candidates with more qualifications leading to more effective employees and organisations.

Paul Gosling, national director of sustainability at the recruitment firm Hays, believes there was still an "oversupply" of candidates 30 years ago. "The challenge in environmental recruitment has always been that the number of people doing these types of degrees, because they're interested in them, is greater than the number of junior-level positions."

Gosling adds that of his own 90-strong cohort of environmental science graduates in 1991, only around half a dozen went on to develop careers in the environmental space.

While university degrees are still important, other factors are growing in significance in the candidate versus prospective employer relationship.

Zofia Bajorek, senior research fellow at the Institute for Employment Studies, says: "A lot of younger people are looking for organisational values when they look for jobs. They're not just looking for a job that matches their technical expertise. They want an organisation that matches their values and where there's a cultural fit, in terms of what an organisation is saying and what an organisation is doing."

When asked about the impact of the expansion of qualifications per candidate, Bajorek says: "It's sad because we are basing people on technical knowledge, rather than other tangible skills that somebody can bring to a role."

In selecting candidates solely on postgraduate qualifications, she believes employers "might be cutting off a large section of the population who could be brilliant for your organisation, but they just might not have been able to afford a master's degree."

Recruitment processes and technology have also changed beyond all recognition.

It wasn't until 2002 that most UK homes had a computer.

Gosling, who started his first recruitment job in 1995, remembers: "I didn't have a computer on my desk when I started working in recruitment. I had a filing cabinet full of CVs, categorised by the skills they had."

"We'd physically open up the post in the morning, review CVs, ring up a client and say we've got this fantastic candidate and then fax the CV across or put it in an envelope. And then two days later, we'd ring up and say, 'did you get that CV I sent you in the post?'"

On top of CVs moving from paper to electronic format, the decision-makers involved in recruitment in the environment and sustainability space have also changed.

"There are many more layers between you as the candidate and the person you're going to be working for in many organisations. And that's one of the complicating factors, partly as a result of the size and scale of the businesses now," Gosling adds.

Another major factor is the growing population of middle managers. These are often people who, 10 or 15 years ago, benefitted from higher education that was free at the point of access and had the career-relevant qualifications needed to progress.

Bajorek says: "When we're looking at existing talent and management, we're at risk of having middle managers who are more technically competent, but maybe do not have the people and managerial skills."

She advocates for the benefits of on-the-job learning, for example, apprenticeship degrees.

New forms of learning are already happening. Businesses, educational institutions and government will need to coordinate effectively if we are to deliver the green training, skills and jobs needed to transform our economies into ones that benefit future generations.

TOM PASHBY AIEMA is a digital journalist at IEMA

"The challenge in environmental recruitment has always been that the number of people doing these types of degrees, because they're interested in them, is greater than the number of junior-level positions."



The man behind a networking revolution

Online platforms and tech start-ups are playing an increasingly important role in tackling the climate and environmental crises.

Anshuman Bapna, founder of Terra.do, explains how



You've had a varied career, having worked for Google and Deloitte before founding several successful online platforms. How did that lead to Terra.do?

I was part of the class at Stanford when Steve Jobs gave his commencement speech about how all the dots connect, and this has happened in my life. One nonprofit that I started, Democracy Connect, got talented professionals to work with Indian politicians on development issues, and as chief product officer at MakeMyTrip.com – now India's largest online travel company – we brought people together to work on under-served opportunities. I then had a genesis moment in 2016, when I returned to Australia's Great Barrier Reef and saw bleaching of the reefs, and that about 30% of it had died. I began to look at climate change more closely.

The ambition of Terra.do is to get 100 million people working on climate change this decade. How big a challenge is that?

We are talking about the biggest transformation humanity has ever seen, transforming energy, agriculture, transportation, manufacturing and finance in every country in 10 to 20 years. Yet we have only two million people working on it. That doesn't make any sense. I have such a strong sense of déjà vu, because my first company was an internet company in 1999, when the internet was supposed to be this cute little thing, and now, 20 years later, 250 million people are employed in the digital economy in some shape or form. The climate economy is going to be bigger than the digital economy – unlike anything we have ever seen. It's moving quickly, but there is a big shortage of talent.

"The Green Careers Hub is a fantastic step forward; a place where individuals can build their careers and grow our community"

How important is it to increase connectivity and share technological resources in the Global South?

Someone asked me recently what I would do on climate action if I had \$100bn. My answer was to put that money into the loss and damage fund created at COP27. This is an opportunity to demonstrate with actual dollars and technology transfers how we can all help upskill each other and into the new climate economy. Countries like India do not need to make the \$2trn mistake that America and China have by investing in oil and gas infrastructure – they can leapfrog directly into solar and wind. This crisis is an opportunity for us to reaffirm the human contract we have with each other, because there is a massive sense of injustice from developing countries and marginalised communities. At Terra.do, we've focused on having representation from all across the world, and our learning programmes typically have people from 25 plus countries, roughly 40% from developing countries.

What advice would you give to workers with a tech background who want to help tackle climate change?

My suggestion would be to zoom out, and come to places such as IEMA and Terra.do to make sense of the entire climate change landscape and what's happening to solve the problems, then take your technology lens and find the intersection point. There are tonnes of interesting companies and jobs out there, and there'll be many more in the near future.

Why did you partner with IEMA's Green Careers Hub?

I met Sarah Mukherjee MBE on the bus at COP26. I've been amazed by IEMA's long-standing vision to get sustainability professionals across the world together. The Green Careers Hub is a fantastic step forward; a place where individuals can build their careers and grow our community. We can power the Hub with all kinds of resources, not just jobs, but learning as well, which aligns with our mission to get 100 million people working on climate change. I'm very excited about that.

Anshuman Bapna is a self-described "serial entrepreneur", having founded four highly successful companies, selling two of them, and raising vast sums of venture capital along the way.

Based in the heart of Silicon Valley, the tech whizz is more accustomed to working under a tree on a beach in sunny Stanford, California, than the four-wall office space most of us are familiar with.

However, from his peaceful surroundings, Bapna is facilitating a quiet revolution, connecting thousands of people across the world with one shared purpose: averting climate breakdown.

He does this through his latest venture, Terra.do – an online school for anyone who wants to work towards tackling climate change – which has partnered with IEMA's Green Careers Hub.

Here, he explains his unconventional career path, and outlines how online connectivity will bring together the workers needed to ensure a sustainable future for the planet.

Find your next role

Browse the IEMA jobs below for inspiration for your green career

HAYS

Senior ESG Consultant

Salary bracket: £30,000 – £60,000

Location: Newark

Apply: www.iemajobs.net/job/3618/senior-esg-consultant

Sustainability Manager – FMCG

Salary bracket: £50,000 – £60,000

Location: Bolton

Apply: www.iemajobs.net/job/3619/sustainability-manager-fmcg

Senior/Principal Environmental Consultant

Salary bracket: £32,000 – £55,000

Location: UK flexible

Apply: www.iemajobs.net/job/3620/senior-principal-environmental-consultant

Senior/Principal EIA Consultant

Salary bracket: £35,000 – £50,000

Location: Midlands

Apply: www.iemajobs.net/job/3621/senior-principal-eia-consultant

Carbon Manager

Salary bracket: Competitive

Location: Newcastle

Apply: www.iemajobs.net/job/3622/carbon-manager

PEGASUS GROUP

Principal/Associate Environmental Planner

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Location: Birmingham Canwell, Cirencester or Bristol

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LB TOWER HAMLETS

Environmental Impact Assessment Officer

Salary bracket: £49,000 – £56,000

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www.greencareershubs.com



Power to the people

Dr Rihab Khalid explains why the road to net zero must be paved with expertise in the social sciences and humanities

Energy has become central to our political, economic and socio-ecological systems. A transition to net zero will require radical shifts in how we think about energy. Yet decisions about energy and enabling policies remain largely driven by techno-economic framings, grounded in traditional science, technology, engineering and mathematics (STEM) disciplines, and overlook the ways in which energy is interlinked within wider social, cultural and political systems. Here, I explain why social sciences and humanities (SSH) perspectives are critical for understanding energy.

Energy and the everyday

Energy shapes most of our modern lives: the activities we partake in, the work we do and the urban environments we plan, navigate and form part of.

SSH perspectives help us see the complex and intricate connections and interactions that form an integral part of energy systems. Understanding these dynamics is essential before undertaking interventions to enhance sustainability. Without recognising the underlying socio-cultural need for our current energy demand, techno-economic efficiency frameworks will be insufficient to achieve sustainable transitions. Hence, change in our energy systems will require change in our everyday practices at the individual, societal and institutional scale.

SSH disciplines, encompassing psychology, sociology, anthropology, history and more, play a vital role in deepening our understanding of societies and how they evolve. They shed light on the complex web of relations, networks and interactions (both human and more-than-human) that are fundamental to our existence. They allow us to uncover the underlying ideologies, path dependencies and decision-making processes at the heart of our institutions, as well as highlighting our societal differences and similarities. As such, they provide insights into the behaviours, motivations, practices, actions and

aspirations that determine and shape future energy transitions.

A socio-technical issue

In particular, the field of science and technology studies (STS) enables us to see the intricate connections and relationships between technology and society. STS helps us understand that energy technologies do not exist in isolation and cannot be taken as purely scientific, neutral and objective. Rather, technologies are shaped by the underlying social contexts, cultural norms, economic interests and political motivations. By understanding energy through a socio-technical lens, we can better develop insights into the unintended consequences, trade-offs and distributional impacts of technological solutions, thereby making better informed decisions for sustainable net-zero transitions.

Politics and justice

Energy systems are not intrinsically democratic and egalitarian, nor is access to energy, by default, fair and evenly distributed. It is crucial to recognise that net-zero transitions will have profound implications for class disparities, gendered and racial differences, and geographical imperatives. Energy systems inherently

involve power dynamics, ignoring which can result in reproducing existing inequalities, marginalisation and exploitation of certain peoples and communities. This makes energy a political issue, and SSH theories and frameworks can help us analyse, challenge and dismantle existing systems and structures of oppression for equitable and sustainable energy systems.

Energy transitions also raise significant questions of justice. Any transition in energy systems towards net zero will inevitably benefit some and burden others. For example, adopting renewable energy technologies has implications for land use, resource extraction and local communities, and can result in similar disparities and differential distributions as their carbon-intensive predecessors if the underlying political and economic systems through which they are developed and governed follow the same imperial, colonial and neo-liberal legacies.

SSH perspectives help us in reframing critical issues so that we can begin asking important questions regarding how we define sustainability and net zero, ensure equity and inclusivity, measure prosperity and wellbeing, and set normative standards for a good life – questions that are imperative to the future we imagine and the path we take towards net zero.

"SSH theories and frameworks can help us analyse, challenge and dismantle existing systems and structures of oppression"

DR RIHAB KHALID (right) is research fellow at Lucy Cavendish College, University of Cambridge



Why do we value the dispensable production of goods in the trillions of dollars, but place no value on the indispensable natural world from which those goods are obtained?

That is the contradiction that renowned environmental strategist, speaker, world traveller and author Paula DiPerna untangles in her new book, *Pricing the Priceless: The Financial Transformation to Value the Planet, Solve the Climate Crisis, and Protect Our Most Precious Assets*.

In the book, she outlines examples from around the globe of pioneering financial innovations – controversial and paradoxical – that flip conventional ideas of how we value natural assets on their head.

As a special adviser to environmental disclosure platform CDP, DiPerna knows the language of big business, and is convinced that financial tools are vital to begin halting our destruction of nature.

You have travelled all over the world, authoring books and working on documentaries. How did you become interested in 'pricing the priceless'?

I wanted to be a writer for as long as I can remember, and became a freelance journalist before volunteering to work on a book for Jacques Cousteau at the Cousteau Society, which changed my

life. He was a charismatic global figure and, after travelling around the world with him, I realised that nature was extremely fragile. What triggered this focus on price was something that Cousteau said about an oil spill, which was the largest oil spill in American history. I told Cousteau how sad it was, and he said "what's more sad is America taking its last oil out of the ground at today's price and wasting it because it doesn't have a real national energy plan". Gradually, I began to see that if we didn't stop thinking of nature as a free good, and didn't think of this entire planet as a fundamental asset, we would definitely be headed for environmental disaster.

What are some of the best examples we have of pricing the natural world?

The number one right now is in the EU with its 'cap and trade' on emissions. It was a US invention, but we abandoned it in 1997, and the EU picked it up when they set up their EU ETs and that really gripped the problem by setting a price on carbon, because without that we have no chance of reaching any kind of climate balance. The UK is not far behind post-Brexit, and there's something like 30 or so countries that have carbon markets in some form, but the EU really is the beacon on carbon pricing and pricing nature. Even so, most countries don't have a balance sheet that shows nature as an asset.

"I began to see that if we didn't stop thinking of nature as a free good, and didn't think of this planet as a fundamental asset, we would be headed for disaster"

You have written to Pope Francis to try to dispel his scepticism around carbon markets. What would you say to those who argue that carbon allowances are too generous and prices too low?

He didn't like the general principle of offsetting, but every system has its quirks, and the difficulty we have with climate change is that it has become such a political football. So in order to get the cap and trade going in Europe, they had to give generous allocations – they over-allocated – so they could bring people to the table to show this is doable. You have to sweeten the pot to get people to the table and keep them there, but as time goes on, it is critical to become more stringent and the EU has tightened its caps and ratcheted down the availability of allowances. I believe that they're doing as much as

The value of everything

Placing a monetary value on nature remains controversial, with some arguing that it is impossible to price ecosystem services in a way that adequately protects and enhances biodiversity.

Paula DiPerna tells Chris Seekings why that is not the case



What are some more novel examples of pricing the natural world that you have come across?

The Rhino Bond is a fantastic innovation. It is a kind of 'pay for success model', where you have private investors working with the World Bank, which underwrites the bond, private investors put up the money, and that generates cash that goes to wildlife protection services in South Africa. It values not only the rhinos themselves but also the role they play in biodiversity, tourism income and culture. If there's a statistically measurable increase in the rhino population, then the bond is paid off and the investors can get their money back with the premium. It is a great example of science, policy and capital coming together. Another that I talk about in the book is the Forest Resilience Bond, which is a very good example of bringing diverse beneficiaries of a resilient forest together. That includes constituents, lumberjacks, biomass specialists, scientists, financial people etc.

A recent article in the *Financial Times* revealed that financial institutions do not understand the models they use to predict the economic cost of climate change and have been underestimating the risk of temperature rises. Why do you think that is?

It's a confirmation of what I've been saying, that people don't understand the

"The EU really gripped the problem by setting a price on carbon, because without that, we have no chance of reaching any kind of climate balance"

Q&A

risk because they can't price it. They don't see it on their books. Everything's been out of alignment in terms of science, policy and capital, and until they get into alignment we will have a problem.

The only way to get those wheels turning together is to have some kind of pricing, because it's like a currency that people can plan with. How is it possible that in a country such as the US, insurance companies can just abruptly stop insuring for fire in California? It must mean they have been underestimating the risks and that they're really scared. In the absence of a price, it's been guesswork.

Organisations are increasingly looking to report their risks and dependencies on nature through CDP, to which you serve as a special adviser. How can we be sure this is accurate?

There's always going to be some level of greenwashing, and nature reporting is a new idea that's not perfect. But have the past 100 years been perfect, with colonialism, the rapacious use of resources, and greenhouse gases rising without any penalty? We've done that experiment, and we need a new world, with really serious auditing and monitoring, which we shouldn't expect to be perfect at the beginning. We are building a new structure of indispensable rules because we are in a hurry and don't have the luxury of 30 years dancing on the head of a pin.

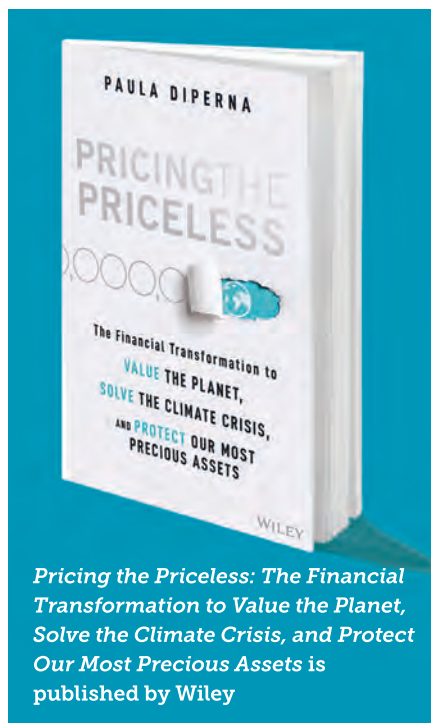
What would you say to those who argue that your confidence in financial innovations and 'pricing the priceless' will not deliver the radical reforms needed to halt the destruction of nature?

Profit-oriented capitalism has been a significant creator of cruelty and lack of justice worldwide through inequities of wealth distribution, no question about it, and I'm not an apologist for that. But we've done the experiment of revolution, and that didn't work out too well in Russia or Cuba, so if we don't price the priceless, how do you make capitalism more responsive to the crises we face?



"The Rhino Bond is ... a kind of 'pay for success model' ... that generates cash that goes to wildlife protection services in South Africa"

You don't have to believe in the climate science to understand the importance of pricing, and the money's out there. There's trillions of dollars looking for a place to go. It's like water – water will find a channel, and we have to channel capital to the right places, but I know it's paradoxical. People say that nature is sacrosanct, and shouldn't be priced, which is maybe where morality comes into it, but capitalism certainly hasn't been largely governed by a moral compass.



Pricing the Priceless: The Financial Transformation to Value the Planet, Solve the Climate Crisis, and Protect Our Most Precious Assets is published by Wiley

The solutions you outline in your book are very high-level, and mainly targeted at thought leaders, business executives, investors, activists and entrepreneurs. Is there more that we should be doing at an individual level to protect nature, such as travelling less and recycling?

Part of me thinks they have become distractions because they haven't got to the scale needed to make a significant contribution. It involves a lot of mental effort, and as long as it's up to the individual, I think it has become a distraction. That being said, the first thing we can all do is think more about the value of the things we buy, and whether that money needs to be spent. Beyond that, we can look at the custodians of our money, so what is my bank doing? Where is my bank investing? Who is it loaning to? I'm also not ashamed to say that I am a believer in political activism, because people need to really hold their elected officials accountable.



Sian Toop asks whether primary school children are missing out on the discussion surrounding climate change

Presently, the National Curriculum for primary schools does not include mandatory teaching on the impacts of climate change, with the topic only being referenced at Key Stage 3.

As a result, children in primary schools across the UK are missing out on learning about the consequences of the climate crisis. This has left many young people stating that they feel worried or ill-equipped in dealing with the issue, or how to deal with climate anxiety.

In 2021, education secretary Nadhim Zahawi claimed that the government intended to put “climate change at the heart of education” as part of the COP26 Educators’ Commitment to Climate Action. Further assurances included supporting teachers to deliver climate-related education and providing the necessary teaching resources. Research in 2021 from Teach the Future found that 70% of teachers felt they had not received adequate training to educate children about environmental issues. Furthermore, promises were made that a model primary science curriculum would be implemented, hoping to introduce climate change as a concept to children in a coherent way. However, there is still no evidence of when this might come into effect.

Pupils are currently introduced to aspects of the topic through ‘core

concepts’ in subjects such as science and geography. They complete work on topics such as exploring different climates, manufactured versus natural environments and various animal habitats. However, while the young students may have some awareness of the impact of climate change, they are still excluded from much-needed learning surrounding the issue.

Equipping learners

With more young people experiencing climate anxiety, it is important that children of all ages receive compulsory education on the subject, granting them transparency of the topic and the opportunity to ask questions or partake in discussions. This learning would equip children with the knowledge and solutions to live more sustainably and understand their potential in helping to reduce further climate impacts.

However, without the necessary changes to the National Curriculum, or the resources that were promised in 2021, staff in primary education are having to do what they can to educate children on the environment and sustainability.

Luckily, there are a number of organisations and charities willing to step in to provide the materials and information to ensure primary schools are able to teach their students from an early age. STEM Learning offers

various tools for schools to teach topics such as the greenhouse effect, green power and sustainability. It also has a selection of resources on green careers aimed at primary school pupils, allowing them to understand the different roles available through fun and interactive learning. For example, writing an application to become a polar explorer.

WWF-UK provides a downloadable presentation on climate change, posters and live lessons that classrooms can join virtually to learn about the impact of human activity on the environment. Great Big Green Week, which took place in June this year, is titled the ‘UK’s biggest ever celebration of community action to tackle climate change and protect nature’. In partnership with educational publishing house Twinkl, the week saw primary schools across the country further their learning of climate change and protecting the environment through activities including litter picking, growing their own food and discussing ideas on how to reduce their carbon footprint.

So, while schools across the UK are doing their best, it is evident that until the subject is adopted as compulsory learning, children in primary schools are just scratching the surface of the sustainability discussion.

SIAN TOOP is a freelance journalist



Point of origin

Managing supply chains has risen up the corporate agenda, so why do so few companies employ a head of traceability? **Catherine Early** reports

Companies are under increasing pressure from consumers, investors and campaigners to know exactly where their products are sourced. Regulation clamping down on greenwashing and bans on supply chains linked to deforestation and human rights abuses are just a few examples of new compliance requirements linked to traceability.

"At the last count, there were 16 pieces of legislation coming into being that applied to the fashion industry, and a significant number of them relate to their supply chain. So having robust internal systems around traceability and being able to verify what you claim is very important," says Nicole Rycroft, founder and executive director of not-for-profit Canopy, which works to make forest-related products more sustainable.

A multi-faceted job

Traceability is cross-functional, covering sustainability, IT, product development, sourcing, legal, logistics and marketing. However, it often comes under the remit of sustainability departments, which have limited leverage over sourcing and logistics staff, raising the risk that company claims cannot be traced adequately, according to financial think tank Planet Tracker.

Alternatively, it is siloed in sourcing, logistics or IT departments, potentially

"It's important to know what you track and why. For that, you need a sustainability hat and a marketing hat"

without considering sustainability issues, it noted. Planet Tracker analysed LinkedIn profiles to find all companies that have appointed a head of traceability or equivalent. Searching on LinkedIn, it found only 18 companies with a head of traceability, compared with at least 10,000 heads of sustainability.

Acknowledging the limitations of its research – LinkedIn represents 25-30% of the global workforce, and Planet Tracker looked at results in English only – the think tank believes the findings to be noteworthy. One reason for the lack of senior people in a specific traceability role could be that it is not the traditional way of organising companies, says François Mosnier, head of Planet Tracker's oceans programme.

"You have someone in charge of sourcing, someone in charge of environment, of IT, or marketing, and all these people have different backgrounds. Traceability is cross-functional, so you need to understand all these different things," he says.

Who's in the HoT seat?

The profiles analysed by Planet Tracker revealed that heads of traceability typically had a background in IT and data, which Mosnier says makes sense because, by definition, traceability is essentially about following data, both within and outside the organisation.

"But it's equally important to know what you track and why. For that, you need a sustainability hat because it relates to risk management, and also a marketing hat to understand how to present this opportunity to your consumers," he says.

Of the 18 companies Planet Tracker found had a head of traceability, the majority had their headquarters in Europe, the US and Asia, although two

companies were based in Australasia, and two in African countries.

Three-quarters of all companies employing a head of traceability were in the food or textile industries, and included H&M, Inditex, VF Corp and palm-oil producers Golden Agri-Resources and Sime Darby Plantation.

Both food and fashion have had scrutiny on their environmental and social practices for many years now, so it made sense that they were more likely to have a dedicated head of traceability, who could not only set

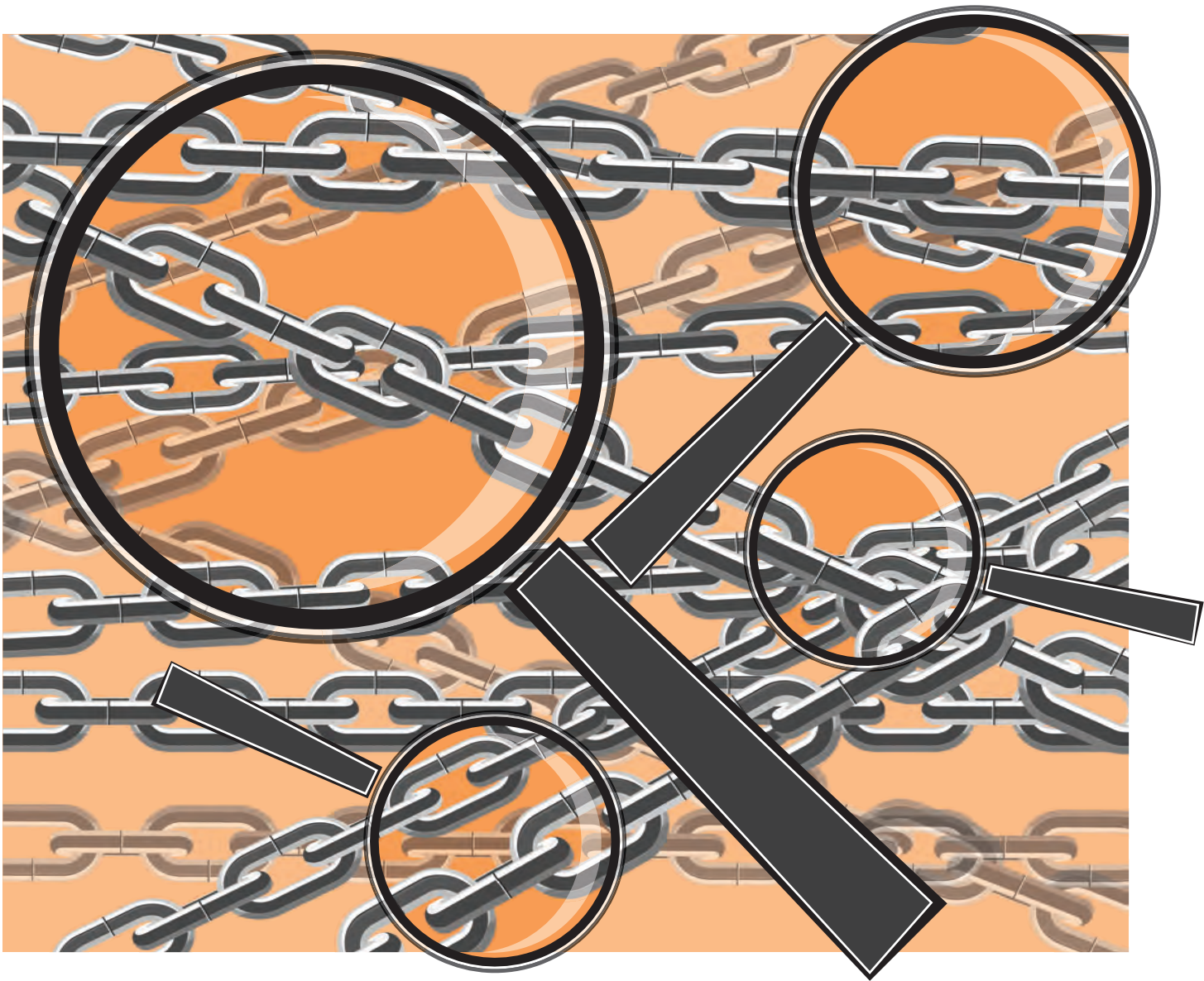
"Head of traceability is a business position. It is now deeply relevant to compliance as well as quality control"

the ambition of sustainability targets related to supply chains but also deliver them right through an organisation, says Rycroft.

"They have realised that a head of traceability is a business position, it helps mitigate risk. It is now deeply relevant to compliance as well as quality control. I was a little surprised that there aren't more of them," she says.

Business benefits

Mosnier believes that companies worry that being transparent could give critical information away to competitors or provide details that could be used against them by campaign groups or activists. Having a head of traceability would remove a company's ability to claim that it did not know about



something bad that had happened in its supply chain, he speculated.

However, better traceability should instead be seen as a way for companies to save costs through increased efficiencies, and reduce risks associated with waste and recalls. Planet Tracker estimates that textiles companies would increase net profits by 3-7% if they implemented full traceability, while seafood company profits could rise by 60%.

Having one person responsible for the issue would allow them to examine budgets across the business – rather than just looking at costs of implementation. They could also see where costs in another department could be reduced, or profits increased, Mosnier adds.

"Considering the regulatory landscape, a dedicated position for traceability

"Having someone senior overseeing traceability does need to be paired with ambitious sustainability targets"

makes a lot of sense from a business perspective," says Rycroft.

Ambitious targets

However, having someone senior overseeing traceability is not an answer in itself, she stresses.

"It does really need to be paired with having ambitious sustainability targets. A head of traceability gives you a clear line of sight on a product,

but that doesn't inherently reduce your risk."

She uses the analogy of a lifejacket made from cement – someone may have full oversight of its production, but the product does not serve its purpose.

Anyone taking on the job would also have to be sure that the company enabled them to bring the rest of the company along to meet those targets, she adds. But Rycroft believes the job would be rewarding – the acronym HoT is appropriate, she says. "It's a sassy acronym for a job title that on face value doesn't sound all that sexy. It involves ensuring compliance, and making sure sustainability efforts are actually delivered to that company's supply chain. It's a fun combination."

CATHERINE EARLY is a freelance journalist



FOOD FOR THOUGHT

Rick Gould investigates how transforming our diets can foster sustainable agriculture

In 1923, Cecile Steel from the Delmarva Peninsula, US, ordered 50 chicks from a local hatchery to raise a few dozen hens for eggs and meat. However, the delivery driver brought her 500 due to an error.

Unable to return them, she adapted and is reputed to have started the modern industry of intensive chicken farming. She bought 1,000 chicks the next year, 10,000 two years later, and kept growing her business. Many other farmers copied her.

Chickens, however, are picky eaters and, like many other intensively farmed animals, require crop-based feed, which in turn needs lots of land and fertiliser to grow. Fertiliser availability was once a limiting factor but, in 1913, BASF in Germany started making enormous amounts of ammonia from nitrogen in the air, using the novel Haber-Bosch process. Ammonia is a key building block of chemical fertilisers and provides reactive nitrogen, essential for plant and animal proteins.

The techniques developed by Steele, animal breeders and industrial chemists have had far-reaching impacts; without

them, the world's population is likely to have been around half of what it is now, and far fewer people would enjoy a diet rich in meat and dairy products, largely propelled by chemical fertiliser.

So how big has this growth been, and what are the specific impacts?

Growth in meat and dairy

The chemical industry makes more than 100 million tonnes of fertiliser annually, eight times as much as in 1960. The world now produces more than three times as much meat as it did 50 years ago.

Currently, about 80 billion farm animals are slaughtered annually to produce almost 350 million tonnes of meat.

According to the UN Food and Agriculture Organization, poultry is a dominant form of meat.

Feeding the world's population means that almost half of all habitable land is used for agriculture and 80% of that is used for growing animal feed for the billions of animals whose emissions of a carbon compound and greenhouse gas, methane, get a lot of attention. However, carbon's neighbour on the periodic table, nitrogen,

gets much less attention, even though excess environmental nitrogen has serious effects. For example, emissions of ammonia from animal manure, slurry and fertilisers are an increasing problem globally. Wales and England's Wye Valley typifies the problems.

No longer ignoring nitrogen

"While the majority of air pollutants have shown marked declines, ammonia emissions have bucked this trend," says Simon Bareham, principal adviser on air quality and biodiversity for National Resources Wales (NRW), who has more than 30 years' experience in this area, and has seen decreases in biodiversity due to ammonia emissions.

"More than half of the Welsh land area now exceeds the ammonia air-quality thresholds established to protect sensitive ecosystems," he adds. "The intensive rearing of poultry, mostly chicken, has led to significant degradation of the Welsh aquatic and terrestrial environment. The situation has grown worse in recent years as consumers opt for leaner, white meat and free-range eggs."

Counter-intuitively, free-range farming has higher emissions of ammonia than equivalent-sized intensive farms, where animals are raised indoors and emissions from manure are easier to control.

Additionally, NRW regulates the larger intensive farms, and has strict controls on ammonia emissions. "Ironically, it is the smaller free-range units not regulated by NRW that have the most profound impacts in parts of Wales," says Bareham.

There are also few controls on manure spreading from such farms, which leads to runoff into rivers and eutrophication.



"While public awareness of ammonia air pollution remains very low, the issue of poultry units and waste spreading has been highlighted in the very high-profile issues of ongoing acute pollution of the River Wye."

So, what are the answers to these problems? Bareham says: "Controlling ammonia emissions from spreading manure and slurry is relatively easy. Also, air filters on animal housing, covering slurry and manure stores, and low-emission spreading techniques are all readily available but are seldom applied. This is not rocket science, but more the political willingness to make such measures mandatory."

However, technology can only go so far.

A complex reality

"It is too risky to say that technology will solve the problems we have today and that we don't need to change behaviour," says Dr Hannah van Zanten, associate professor at Wageningen University in the Netherlands. "For example, people can believe they do not need to change their diets because technology will make our diets sustainable. The reality is much more complex and nuanced."

Van Zanten's team and researchers elsewhere have been examining three interrelated themes: repurposing animal feed, dietary changes and circularity.

Many researchers have examined the benefits of repurposing land used for growing animal feed. One international team of researchers focused on the US, where 75% of soya beans are grown to feed animals. The researchers determined that if the land area used to grow feed for beef were used for growing poultry feed, it

"The [CiFoS] model tells us which crops to grow where, and which fertilisers to use under different scenarios"

would be possible to feed up to an extra 140 million people. And if the same land area were used to grow crops for a proportionately higher plant-based diet, it could feed an extra 190 million people.

Van Zanten was also part of another international team of researchers that examined soya beans fed to animals. The EU is heavily dependent on soya imports, yet the researchers found that this could be reduced by about 80% through measures such as dietary changes, like a diet with more legumes and soya-bean products.

This in turn would free up up to 14 million hectares of land outside the EU, currently used to grow soya beans. The common factor between these studies and others like them is a switch from red meat and poultry products to more plant proteins such as legumes and pulses.

"The main reduction takes place in beef. If we consume the same amount of red meat and apply circulatory principles, then we replace beef with pork or slaughtered dairy cattle. Excluding grass-fed dairy cattle, pigs can eat food waste and parts of crops we cannot eat," explains van Zanten.

Van Zanten's team is now looking at a significant redesign

of the food system, focusing on circularity, repurposing and alternative protein sources. The team has developed a model called Circular Food Systems (CiFoS), allowing people to design and assess achievable, innovative and sustainable food systems.

"We developed the CiFoS model to look at different, optimised scenarios to provide a healthy diet, with reduced environmental impacts. The model tells us, for example, which crops to grow where, and which fertilisers to use under different scenarios," explains van Zanten.

Changes in consumption

So, what reductions or changes in meat and dairy consumption should we expect? "It depends on the scenario, such as whether we include importing and exporting. Although there are reductions in animal products in diets, milk is reduced least. For example, if you feed grass-fed cattle with crop by-products, then they are efficient animals," she adds.

Both van Zanten's team and other international researchers are also looking at fertilisers, such as minimising chemical fertilisers, while using organic fertiliser efficiently and sustainably.

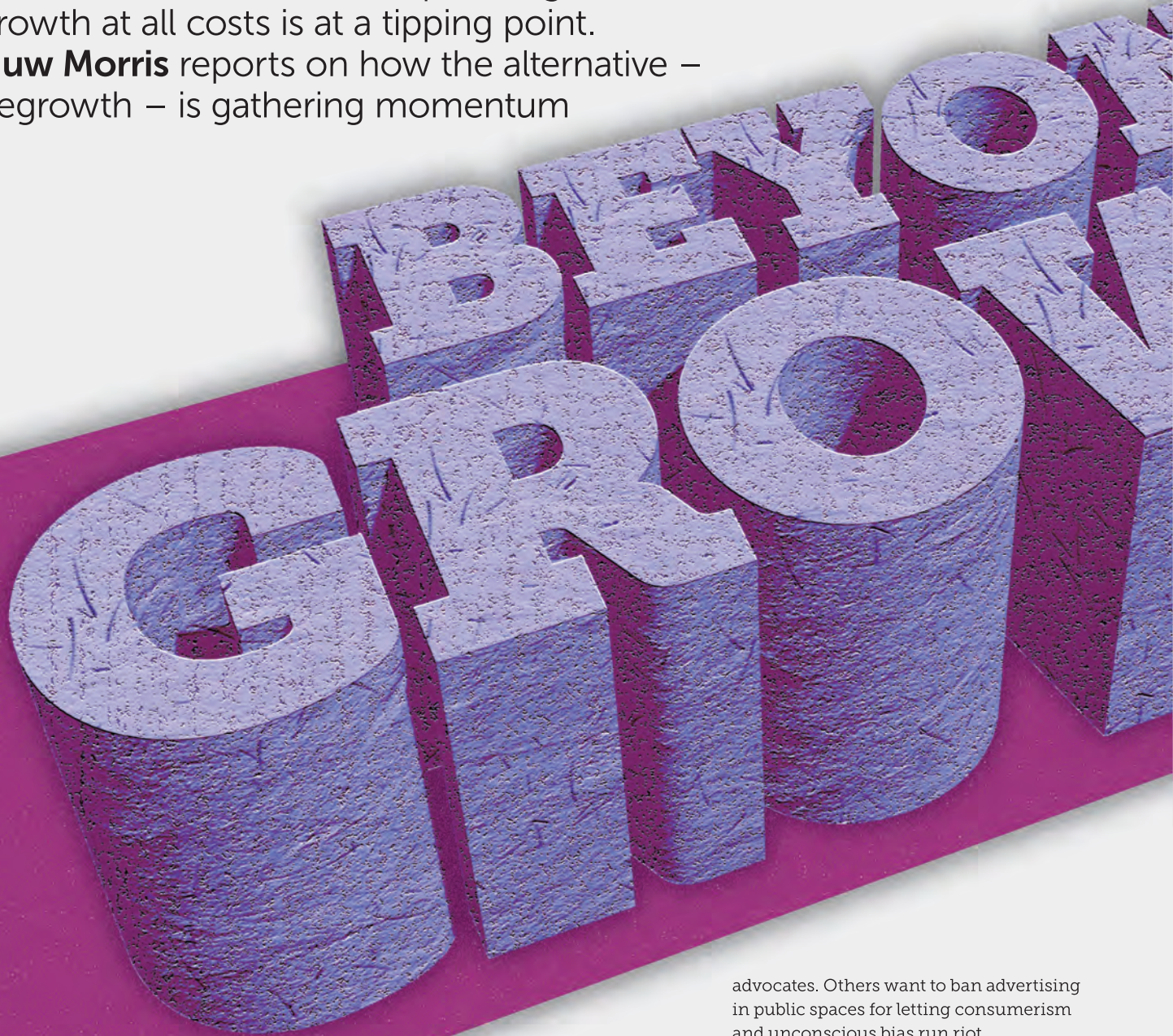
Lastly, researchers at Wageningen and many other centres are often asked if technology can enable us to continue with our current diet. "No, that is simple to answer. It is not good for us and not good for the planet," she concludes. In short, sustainable agriculture means a paradigm shift in our diet.

RICK GOULD is an air-quality adviser at the Environment Agency. He writes in a personal capacity



The world's obsession with pursuing economic growth at all costs is at a tipping point.

Huw Morris reports on how the alternative – degrowth – is gathering momentum

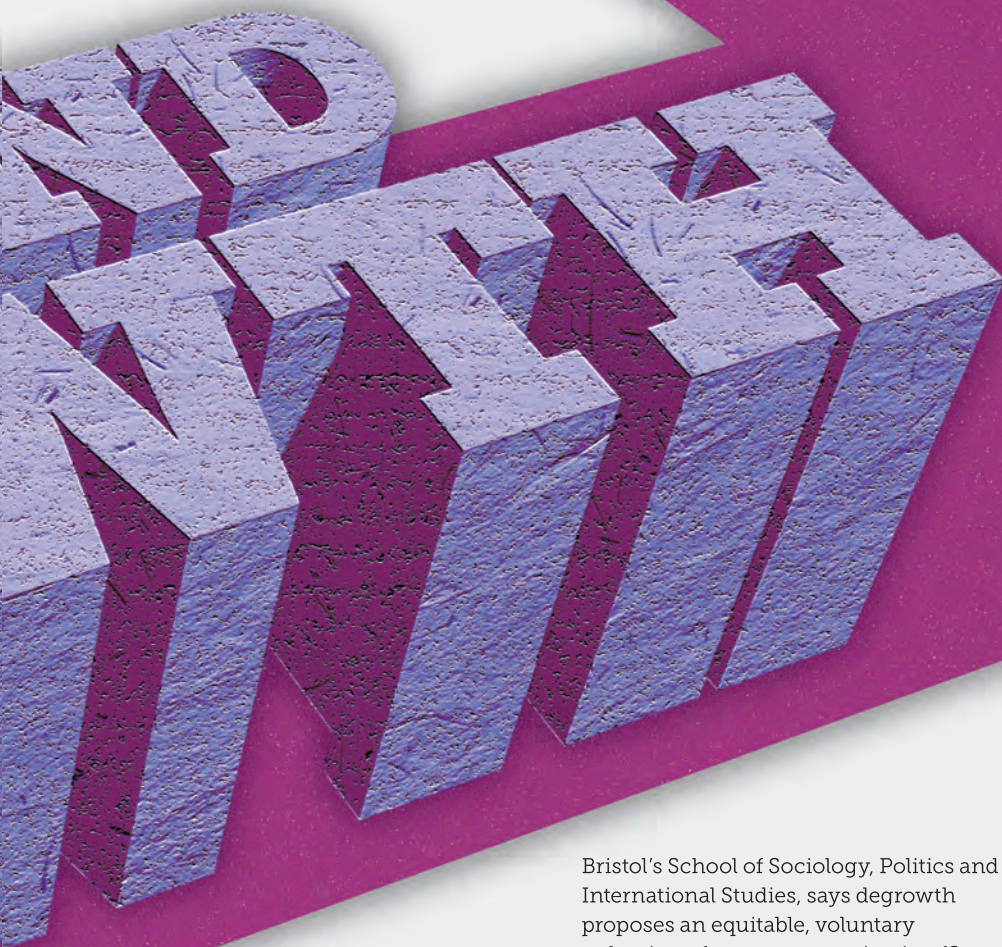


For some, tackling overconsumption means growing their own food. To others, it means no longer driving cars. Making use of empty houses rather than building new ones is a cause célèbre in certain quarters. Lobbying governments to prohibit planned obsolescence by companies of their products is crucial to another set of

advocates. Others want to ban advertising in public spaces for letting consumerism and unconscious bias run riot.

Then there is the debate about where it all began. Some think the ancient Greek philosopher Epicurus started it with his hierarchy of desires. Under this idea, simplicity and sufficiency hold the key to happiness and wellbeing by satisfying basic needs and bolstering social relationships. Others cite a more labyrinthine heritage (see right).

What strings all this together is the concept of degrowth, coined as a term by the social philosopher André Gorz in 1972. Once on the margins, even that bastion of



DEGROWTH'S HERITAGE

Degrowth has a bewildering lineage. Bristol University's Katharina Richter credits many postcolonial and Global South thinkers, leaders and activists who have advanced alternatives to growth-based development and "the entwined logics of capitalism and colonialism long before a movement called 'degrowth' existed".

Indian independence leader Mohandas Gandhi, political philosopher Frantz Fanon, economist Samir Amin, anti-colonial activist Julius Nyerere and former Burkina Faso president Thomas Sankara are among them, but more recent inspiration has come from Kurdish political prisoner Abdullah Öcalan, environmental activist Vandana Shiva and eco-feminist thinkers such as Maria Mies. John Stuart Mill, for social critiques of growth, and the anti-utilitarian movement around Marcel Mauss are also influences, Richter argues.

The concept gained considerable momentum in Europe in the 2000s when anti-advertising activists spread degrowth ideas from France to Catalonia and Spain. This led to protests for car-free cities, communal street meals and anti-advertising campaigns, conferences and publications.

capitalism, the World Economic Forum (WEF), is taking degrowth seriously, briefing billionaires and global leaders about its implications. So, what is it?

Not so much an umbrella term but a festival tent, degrowth means shrinking rather than growing economies to use less of the world's energy and dwindling resources. Wellbeing is put ahead of profit. Dumping gross domestic product (GDP) – and its emphasis on output of goods and services – as a measure of economic performance is the first step.

Changing lifestyles

Degrowth advocate Sam Alexander, research fellow with the Melbourne Sustainable Society Institute, says the concept "does not mean we are going to be living in caves with candles", but rather focuses on people in rich countries changing their diets, living in smaller homes and driving or travelling less.

Katharina Richter, lecturer in climate, politics and society at the University of

Bristol's School of Sociology, Politics and International Studies, says degrowth proposes an equitable, voluntary reduction of overconsumption in affluent economies and a paradigm shift away "from the ecologically and socially harmful idea that producing more stuff is always good". Instead, economic activity should focus on promoting care, cooperation and autonomy, which would also increase wellbeing and give people a bigger say in their lives.

"Current and past growth trajectories are and were dependent on colonial resource accumulation and extraction – the resources and materials that fuel growth in the Global North and other affluent economies are extracted in

"[Degrowth means] people in rich countries changing their diets, living in smaller homes and travelling less"

Economics

"Degrowth is up against powerful interests – all fighting tooth and nail for the status quo"

biodiverse or water scarce territories located in the Global South," she adds.

"That means if we want to decarbonise our affluent economies in the race to net zero, we cannot do so without some form of energy and material demand-reduction in the Global North – at least not if we want to avoid perpetuating resource theft and if we want to create ecological and conceptual space for the Global South to address basic needs while adapting to the climate crisis."

Fighting for the status quo

However, the backlash is already under way. Opponents of the concept – usually right-wing media commentators – cite an endless list of gains from economic growth: freedom from poverty, indoor plumbing, electricity, longer life expectancies, cancer treatments and vaccines among them.

A WEF briefing paper, which looks at the pros and cons of degrowth, points to rival arguments about the impracticality of poor countries developing "up to a certain level of prosperity" and then stopping, while rich countries scale down to the same level.

There is also "the inconvenient truth" ventured by other opponents, it adds, that most carbon emissions in the coming decades will be from newly middle-income countries, like India, China and Indonesia, rather than rich countries such as the US.

Degrowth is up against powerful, entrenched interests – billionaires, the defence industry, Big Pharma, fossil fuels, industrial agriculture as well as politicians, lobbyists and some parts of the media – all fighting tooth and nail for the status quo.

Robert Constanza, an ecological economist and professor at University



DEGROWTH – WHAT TO WATCH

The European Parliament is looking at tackling 'multiple system failures' and bringing about 'system transformation', with a major conference held in May on setting a 'beyond growth' agenda. A single-minded pursuit of GDP growth at all costs was condemned, with MEPs looking at alternative indicators to measure wellbeing.

According to UCL's Robert Constanza, the number of experiments with societal wellbeing indicators "is in the hundreds". However, "such experiments can help us move towards a broad consensus on what needs to be included to form a more complete and useful picture of societal wellbeing that can replace GDP".

These include:

- **Genuine Progress Indicator:** Created in the 1990s and taking account of such social and environmental factors as air pollution, crime and resource depletion.
- **Gross National Happiness:** Created by the King of Bhutan in the 1970s and enshrined in the country's constitution in 2008. This measures happiness through the four pillars of good governance, sustainable socio-economic

development, cultural preservation and environmental conservation.

- **Better Life Index:** Created by the OECD with a broad mix of issues such as housing, work-life balance and civic engagement.

- **Human Development Index:** Developed by the UN to measure income, health and education.

- **Social Progress Index:** This focuses on social and environmental outcomes, rather than income.

New economic models that would allow projections into the future to assess the sustainability of policies aimed at providing societal wellbeing are under the microscope too. These could build on initiatives such as Canada's Low Growth model and the global Earth4All model developed by the Club of Rome, the European Parliament says.

Several governments, including the EU and the Wellbeing Economy Governments group – Canada, Finland, Iceland, New Zealand, Scotland and Wales – are also pioneering measures of sustainable wellbeing and the policies needed to achieve them.

"We need to put our efforts into reorienting our economy on care, wellbeing and sustainability"

College London's Institute for Global Prosperity, says overcoming them and society's addiction to the current system will require a broad consensus and "a movement of movements around the shared goal of sustainable wellbeing for humans and the rest of nature". Richter argues that the major challenge is

breaking the cultural power of the 'growth, growth, growth' paradigm.

Good and bad growth

"Growth is usually associated with good things, personal development or achievement," she adds. "But growth can also be a cancer.

"Instead, we need to put our efforts into redistributing resources, and reorienting our economy on care, wellbeing, liveable jobs and sustainability. These are working-class concerns, not elitist lofty ideals, but the challenge is how to communicate, engage with and generate support by a broad coalition of interests for a post-growth agenda."

HUW MORRIS is a freelance journalist

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PLEDGE TO NET ZERO

Progress to date

BY DAVID SYMONS FIEMA

Pledge To Net Zero was set up by WSP, SocEnv, IEMA, AECOM and others in 2019 to show how the environmental industry is taking fast action to cut its own carbon emissions. Today we have around 150 member companies. Together, we have cut carbon emissions by nearly 600,000 tonnes from their baseline years to the end of 2022. Members commit to science-based targets for their work and each year tell us how they're getting on. These are our key takeaways and lessons from this year's report back:

- 1 Most members have made good progress on scope 1 and 2 emissions
- 2 Scope 3 emissions continue to be difficult for many to measure, but focus on action without getting stuck on data
- 3 Embedding scope 3 into buying is a key strategy
- 4 Work with your landlord to reduce emissions
- 5 Transport emissions are bouncing back – try to avoid 'junk miles'
- 6 Getting better data is all part of the journey towards net zero
- 7 Case studies are gold
- 8 Pace is key.

Membership of Pledge to Net Zero is free and we welcome all in the environmental industry keen to take fast action on net zero. Members commit to:

- Setting a 1.5°C aligned science-based target
- Publicly reporting their emissions
- Producing one piece of net-zero thought leadership each year.

Progress is tracked through a simple annual report back and overseen by a volunteer leadership team established by Pledge's founding partners.

Visit www.pledgetonetzero.org to get involved.

Read the full article: www.iema.net/articles/the-environmental-industrys-net-zero-progress



Turning the tide on ocean action

A one-day conference, organised by community interest company Climate Action North, is showcasing some of the extensive work taking place to restore and conserve the seas and oceans.

Held on World Ocean Day on 8 June in Sunderland, the Ocean Action Conference saw marine and rewilding experts share stories and best practice on collaborative, meaningful and impactful ocean action.

In addition to updates from the Marine Conservation Society and Rewilding Britain, the conference highlighted Project Seagrass's work, Hampshire & Isle of Wight Wildlife Trust's Solent Seagrass project, and Yorkshire Wildlife Trust's activities at Spurn Point. There were also local updates on the Wild Oysters and Estuaries projects run by Groundwork NE & Cumbria, the newly formed Stronger Shores initiative at South Tyneside Council, and seagrass restoration work by Tees Rivers Trust.

The event was hosted by marine conservation and ocean action champion Emily Cunningham, who is driving local action through her #Motion4theOcean Declaration for local authorities.

Sharon Lashley, managing director of Climate Action North, said: "It was fantastic to see so many interested and engaged people in one room to share ideas and approaches to secure a future for ocean recovery. Our speakers gave inspiring and insightful presentations on how they're overcoming the challenges in rewilding the seas, and the feedback from attendees was overwhelmingly excellent."

The conference also hosted an #OceanAction market, attended by local charities and small businesses, including artist Louise Hobson with her ocean-inspired artwork, Drake The Bookshop, the Wildlife Trusts, North Sea Rejects and Groundwork NE & Cumbria.

The event was run in partnership with marine safety specialist Swiftwater Solutions and leading coastal project Explore Seascapes.



● Climate Action North reinvests all funds raised into climate action projects across the North of England.

To find out about sponsorship opportunities, please get in touch via www.climateactionnortheast.org.uk.

SHUTTERSTOCK

The reading room

Six of the latest books on the environment and sustainability

The Adventure of Sustainable Performance: Beyond ESG Compliance to Leadership in the New Era

Stuart McLachlan, Dean Sanders

In a time of disruption, boundaries need revisiting, systems need

reimagining and assets need repurposing through wise stewardship. The authors share their experience serving clients and driving performance as the world transitions to a

net-zero carbon future. Through storytelling and interviews with international leaders in business and sustainability, and by anchoring practical advice with evidence and truth, this book helps leaders to see foundations upon which the new era will be built, and new systems of value that will be realised.



Gold Standard ESG and Sustainability: A Step-by-Step Guide to Producing Corporate Sustainability Reports – 3rd ed

Kye Gbangbola, Nicole Lawler

This practical and concise book provides a step-by-step guide to

the reporting process in line with the latest reporting standards and frameworks presented by the International Integrated Reporting

Council and the Global Reporting Initiative. It covers the key processes: planning, producing a business case, the development of action plans, process and team leadership, and generating cross-functional buy-in. Templates are provided for certain steps to simplify the tasks involved.



The Last Drop: Solving the World's Water Crisis

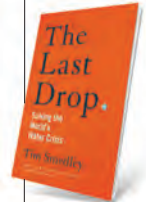
Tim Smedley

Water scarcity is the next big climate crisis. Water stress – not just scarcity but also water-quality issues caused by pollution – is already driving

the first waves of climate refugees. It's clear that human mismanagement of water is dangerously unsustainable, for both ecological and human survival. And yet in recent

years some key countries have been quietly and very successfully addressing water stress.

The author meets experts, victims, activists and pioneers to find out how we can mend the water table on which our survival depends.



Five Times Faster: Rethinking the Science, Economics, and Diplomacy of Climate Change

Simon Sharpe

As Greenland melts, Australia burns, and greenhouse gas emissions continue to rise, we think we know

who the villains are – oil companies, consumerism, weak political leaders. But what if the real blocks to progress are the ideas and institutions that are supposed to be helping us?

In our fight to avoid dangerous climate change, science is pulling its punches, diplomacy is picking the wrong battles and economics has been fighting for the other side. This provocative book sets out how we should rethink our strategies and reorganise our efforts in the fields of science, economics and diplomacy, so that we can act quickly enough to stay safe.



Not Just for the Boys: Why We Need More Women in Science

Athene Donald

The book reflects on how, historically, society has excluded women from the scientific sphere and discourse, what progress has

been made and how more is still needed. It explores societal expectations, using evidence of the systemic disadvantages women operate under, from the developing science of how our brains are – and, more importantly, aren't – gendered, to social science evidence around attitudes towards girls and women doing science.

It also draws on the voices of leading women in science describing their feelings and experiences. It argues the moral and business case for greater diversity in modern research.



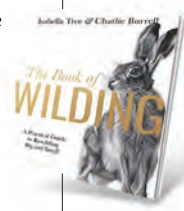
The Book of Wilding: A Practical Guide to Rewilding Big and Small

Isabella Tree, Charlie Burrell

The enormity of climate change and biodiversity loss can leave us feeling overwhelmed. How can an individual ever make a

difference? The authors know first-hand how spectacularly nature can bounce back if you give it the chance.

This is an ambitious and pragmatic handbook on how we can all help restore nature. It is inspired by the requests they receive from people wanting to learn how to rewild everything from unprofitable farms, landed estates and rivers, to ponds, allotments, churchyards, urban parks, gardens, window boxes and public spaces.



Meghna Das MIEMA CEnv

Head of international programmes engagement, Unicef UK;
sustainability professional and chartered environmentalist

Why did you become an environment/sustainability professional?

I believe we are a part of nature and not apart from it. My childhood memory of my father's scrapbook on animals and nature from newspaper/article cuttings is my first recollection of being interested in the environment. As a student, I took part in debates etc on the environment. After graduating in botany (Honours), I did a master's in environmental biology.

What was your first job in this field?

As senior environmental scientist at Development Alternatives, an NGO in India, I was responsible for coordinating a nationwide programme – CLEAN-India (Community Led Environment Action Network) – to assess the state of the environment, generating awareness, taking action and advocating through policy change for environmental improvement and sustainable development in 78 Indian cities.

How did you get your first role?

I interviewed for it after my master's at Delhi University. The organisation needed someone who understood the breadth of environmental challenges from waste management to climate change, and could communicate to multiple stakeholders, including government, children and community members.

What does your current role involve?

I lead a team of specialists working on Unicef areas of work, including the environment, climate change, WASH (water, sanitation, hygiene), health, nutrition, education, emergencies and fundraising for partnership development, advocacy and communications. I am also part of a working group to reduce our organisation's environmental footprint.

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

I joined Unicef UK in 2015 to bring the environmental lens into its social work. Based on my achievements working with policy colleagues and developing private sector partnerships to give millions of

children better environmental outcomes, I was seconded to Unicef Geneva and New York to help develop a strategy for engaging private sector partners globally on climate change and the environment, which is now a key priority for Unicef.

What's the best part of your work?

The scale, reach and impact of Unicef globally and working with UK private sector partners to have a massive impact on Sustainable Development Goals.

What's the hardest part of your job?

Mainstreaming environment and sustainability in all our work.

What was the last development event you attended?

Training in equity, diversity and inclusion (EDI).



What did you bring back to your job?

EDI is a vital part of any job and I wrote an article on 'Why diversity is needed in the environmental profession' for the Society for the Environment, to spread the word.

What are the most important skills for your job?

Communication, seeing the bigger picture, connecting the dots, breaking down silos and leading inclusive teams.

Where do you see the profession going?

Sustainability being mainstreamed into everyone's role.

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

Creating positive impact through thought leadership, influencing, developing



partnerships and helping further the aims of sustainable development globally.

What advice would you give to someone entering the profession?

Learn about other areas of work and how sustainability intersects and brings value to everything.

How do you use the IEMA Skills Map?

When applying for my Chartered Environmentalist, I found it so useful in identifying my strengths and gaps.

What three words best describe you?

Strategic, solutionist, nature-lover.

What motivates you?

Learning from nature, spending time in nature and learning about/knowing how everything is interconnected.

What is your personal motto?

Dream big, action it. Dreams do come true!

What's the greatest risk you have ever taken?

As a working mother, switching sectors and working on diverse topics and areas in different parts of the world.

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

Leonardo da Vinci – I am inspired by him being inspired and learning from nature.

GET IN TOUCH

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

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