COMMITTING TO THE CLIMATE IN THE YEAR OF COP26

"Climate-related risks and the deterioration of the world's natural capital assets are the most significant issues of our time. Support across firms for ESG and ethical finance is therefore critical for future sustainability and stewardship of our world." Thus said CISI CEO Simon Culhane, Chartered FCSI, in the wake of a gloomy survey of CISI members in the last quarter of that bad old year 2020. Only 20% of respondents were confident that their firms are committed to ethical finance policies and ESG principles when it comes to their lending, investing, wealth management and fund management activities. Relief is at hand in this *Review of Financial Markets*, though, with leading-edge thinking on this theme by serious academics and practitioners from round the globe – and from our youngest-ever author.

Bill Gates, philanthropist and co-founder of Microsoft, in a new book on *How to avoid a climate disaster* writes of "the solutions we have and the breakthroughs we need". His focus is on 'green premiums'. A gallon of jet fuel in the US, for instance, has cost around US$2.22 in recent years. The Gates green premium is US$3.13, a premium of more than 140%. Advanced biofuels for jets currently cost on average US$5.25 per gallon. So, Gates asks: "How much are we willing to pay to go green? Will we buy advanced biofuels that are twice as expensive as jet fuel? Will we buy green cement that costs twice as much as the conventional stuff?" He has his own, innovative offers of solutions in the book.

Professor Alexander Van de Putte, a great guru on 'sustainable foresight' – which he teaches at IE Business School in Madrid, one of the world's very top-ranking schools – introduces (p.61) his own fascinating and radical ideas on breakthroughs in his new book *Leapfrogging sustainability* (available free to CISI members). One of his co-authors, professor Steve Evans of Cambridge University, then describes the coming revolution in production processes and economics that underpin much of the 'green to grey' pivot highlighted in this issue's City View (p.5).

Another team from Cambridge, from the university's Institute for Sustainability Leadership, then analyses how financial boards should change their ways to address the climate challenge.

Last, but very far from least, Ava Tambala, a brainy British school-leaver who recently interned with our friends at Refinitiv, paints a startling picture of the huge world of green crime.

Recent programmes on all of these – and far more – are now available on CISI TV.

George Littlejohn MCSI
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Cutting Back

I used to be in HR in the City
she says, drinking the tea
I've brought out on a tray.
Above us, half skeleton,
the London plane tree
which fills my windows.

But I wasn't ruthless enough
Into the wood-chipper go
armfuls of fresh branches,
leaves warm with sunlight.
We watch the whirring
spew of green and brown.

I could see the human consequences.
She puts down her mug,
straps on her helmet,
picks up the chainsaw,
and boots spiking the trunk
climbs to cut the other half.

Nigel Pantling, Chartered FCSI, is our Poet in Residence. He is a former soldier and senior civil servant turned senior merchant banker – see nigelpantling.com – and the author of a number of poetry volumes, most recently It's not personal.

LEAPFROGGING SUSTAINABILITY – THE CHANGING GLOBAL ENVIRONMENT

IF WE ARE TO WIN THE CLIMATE CHALLENGE, WE NEED TO RELEARN THE ABCs OF LEAPFROGGING – AGILITY, BOLDNESS, COURAGE

Alexander Van de Putte is professor of strategic foresight at IE Business School, managing partner of the Sustainable Foresight Institute and chief strategy officer and chair of corporate governance & stewardship at the Astana International Financial Centre (AIFC). He is also the chair of the Board of the AIFC Bureau for Continuing Professional Development and an independent director of the AIFC Authority.

He is a lead author of a new book on *Leapfrogging sustainability*, available free to CISI members, and from which this paper is adapted, as is the next.

For full details and references quoted in both, see *cisi.org/rofmFeb21*

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> *"Our data and metrics were all measuring the past. So, I started asking a different set of questions – questions about how to identify train wrecks in the making and how to track those signs and make adjustments to avoid being blindsided."*
>
> **Patrick Thean**
> **CEO of Rhythm Systems, 2014**

There are several largely exogenous new realities (recent, current, emerging) that countries, and especially natural-resource driven economies, need to consider when designing their strategies going forward. Failing to do so will result in loss of competitive position, economic volatility, rising social inequality, and potentially social unrest.

These new realities together create a window of opportunity for emerging economies to leapfrog into the future. Here we consider three: the end of the commodities super cycle, global commitments to sustainable economic development, and changing mindsets.

THE END OF THE COMMODITIES SUPER CYCLE

The commodities super cycle started with a significant jump in commodity prices in 2002, driven largely by populous emerging market (especially Brazil, Russia, India, China and South Africa) growth, China's entry into the World Trade Organization, and the resulting accelerated globalisation. The first cracks in the commodities super cycle appeared following the 2008 global financial economic crisis when it became apparent that debt-fuelled consumption in OECD countries was unsustainable. This, combined with an increased shift from manufacturing to services, meant Chinese industrial activity started to decline, and therefore so did its demand for natural resources.

The commodities super cycle came to an end during the 2011–2015 bear market and is unlikely to find a new growth model, with slower growth in China, global trade tensions, emergence of the fourth industrial revolution, and the increased emphasis on sustainability.

"Oil is an income model, not a growth model"

Around the time of the partial listing of Saudi Aramco in November 2019, Total CEO, Patrick Pouyanné, famously stated: "Oil is an income model, not a growth model". An interesting quote from the chief executive of one of the world's largest oil-producing companies. Given the current global health crisis, the quote could potentially be revised to: "Oil is neither an income model nor a growth model."

The European Investment Bank announced on 14 November 2019 that it would stop financing fossil fuel energy projects and that it had created a €1tn climate action and environmental sustainable investment fund to help accelerate clean energy innovation, energy efficiency and renewables.

Norges Bank Investment Management, the world's largest sovereign wealth fund with a market value exceeding US$1.1tn, announced on 13 May 2020 that it is divesting from some of its biggest commodity investments, including Glencore, RWE, AGL Energy, Sasol, Canadian Natural Resources, Imperial Oil, Cenovus Energy, Suncor Energy, and Anglo American. Previously, Norway's parliament had tightened the fund's investment activities to exclude coal mining, tobacco producers, nuclear weapons and cluster bombs. Its progressive divestment of commodities further illustrates that there is no future in commodities as a growth strategy.

GLOBAL COMMITMENTS TO SUSTAINABLE ECONOMIC DEVELOPMENT

United Nations-led initiatives including the Paris Agreement, the Kyoto Protocol and the Sustainable Development Goals have seen widespread global commitment in recent years. While both the Paris Agreement and the Kyoto Protocol are targeted towards addressing climate change, the Kyoto Protocol established emissions reduction commitments for developed nations, while the Paris Agreement applied to all countries – developing and developed. Out of 197 parties to the United Nations Framework Convention on Climate Change (UNFCCC), 185 have signed up to the Paris Agreement and undertaken commitments and identified their nationally determined contributions (NDCs) (UNFCCC, n.d.).

There are several bodies that have recommended solutions to tackle the CO2 emissions and climate change, but now is the time to take collective action. One such solution is identified in the International Energy Agency's *World energy outlook (WEO) 2018*; the Sustainable Development Scenario that presents an integrated approach to maintain CO2 levels at 2017 levels and achieve internationally agreed objectives

GROWTH OF SUSTAINABLE INVESTING ASSETS BY REGION IN LOCAL CURRENCY 2014–2018

	2014	2016	2018	Growth per period		Compound annual growth rate (CAGR) 2014–2018
				Growth 2014–2016	Growth 2016–2018	
Europe	€9,885	€11,045	€12,306	12%	11%	6%
United States	$6,572	$8,723	$11,995	33%	38%	16%
Canada (in CAD)	$1,011	$1,505	$2,132	49%	42%	21%
Australia/New Zealand (in AUD)	$203	$707	$1,033	248%	46%	50%
Japan	¥840	¥57,056	¥231,952	6692%	307%	308%

* Asset values are expressed in billions. All 2018 assets in this report are as of 12/31/17, except for Japan, whose assets are of 3/31/18.

Source: Global sustainable investment review 2018

on climate change, air quality, and universal access to modern energy. The *WEO 2018* highlights that a sustainable development scenario that is aligned with the Paris Agreement can be made possible, but will be heavily determined by the actions undertaken by governments. The prerequisites for this will not only include the joint political will globally, but also the mammoth funding required for the implementation of NDCs. Some of the key considerations in this scenario include (International Energy Agency, 2018):

- renewable energy technologies to lead the way in providing universal access to energy, thereby increasing the share of renewables in the power mix from one-quarter in 2017 to two-thirds in 2040
- implementation of economically viable options to improve efficiency in the energy sector, thereby maintaining overall demand in 2040 at the same level as in 2017; and
- for the first time in the *WEO*, clean water is examined as a dimension, including the energy required to provide universal access to clean water and sanitation.

MINDSETS ARE CHANGING

A world that is faced with growing challenges is also in the midst of an intergenerational wealth transfer, estimated at US$30tn from baby boomers to their children, a majority being millennials, which is expected to take place over the next two or three decades (MSCI, 2020). The millennial generation is seeking far more than mere financial factors; it is seeking responsible investments and positive environmental, social and governance (ESG) impacts alongside financial returns, as some recent revolutionary findings show.

According to an MSCI study, the three common objectives among sustainability-minded investors are:

1. integration of ESG factors because they believe that companies with strong ESG factors are better managed and that this may improve their investment results
2. reflection of their personal values in relation to ethical, social, religious or political beliefs; and
3. selection of investments with a positive impact on environmental, social, and political challenges and thereafter the ability to monitor those investments based on norms set through global frameworks (e.g. Paris Agreement, UN Sustainable Development Goals).

// US$30tn IS BEING TRANSFERRED FROM BABY BOOMERS TO THEIR CHILDREN //

The *Global sustainable investment review 2018* (*GSIR 2018*) by the Global Sustainable Investment Alliance highlights the widespread global interest and engagement in sustainable investing, which is an investment approach that considers ESG factors in making investment decisions. The *GSIR 2018* covers information for five markets (Europe, US, Canada, Japan, and Australia and New Zealand), collectively managing sustainable investing assets worth US$30.7tn as of early 2018. This is a 34% increase since 2016, with Japan and the US leading the way. In Japan, sustainable assets grew at a staggering 308% from 2016 and the corresponding growth rate in the US was 16%, with other regions continuing to rise but experiencing growth at a slower pace.

On the other hand, at the start of 2018, the proportion of sustainable assets in relation to total assets grew in almost every region, with sustainable assets representing the majority of their overall assets in Canada, Australia, and New Zealand. The only region that had a slight decline in this share was Europe. However, with nearly half of the global sustainable and responsible investing assets domiciled in Europe, it continues to manage the highest proportion of sustainable assets, according to the *GSIR 2018*.

The *GSIR 2018* also indicates that the top sustainable investment strategy globally continues to be 'negative or exclusionary screening' – defined in the paper as "exclusion from a fund or portfolio of certain sectors, companies or practices based on specific ESG criteria" – with US$19.8tn assets under management (AUM). This is followed by 'ESG integration' – "the systematic and explicit inclusion by investment managers of environmental, social and governance factors into financial analysis" – at US$17.5tn AUM; and 'corporate engagement and shareholder action' – "the use of shareholder power to influence corporate behaviour, including through direct corporate engagement (i.e. communicating with senior management and/or boards of companies), filing or co-filing shareholder proposals, and proxy voting that is guided by comprehensive ESG guidelines" – at US$9.8tn AUM. Impressive growth rates in assets across almost all other strategies are reported, except for 'norms-based screening' – "screening of investments against minimum standards of business practice based on international norms, such as those issued by the OECD, ILO, UN, and UNICEF" – which declined by 24% from US$6.2tn to US$4.7tn in assets. These trends support a growing change in mindsets among investors globally.

FROM LINEAR TO CIRCULAR ECONOMIES: THE END OF THE 'TAKE-MAKE-WASTE' SYSTEM

PROFESSOR STEVE EVANS OF CAMBRIDGE UNIVERSITY'S INSTITUTE FOR MANUFACTURING ON THE COMING REVOLUTION IN PRODUCTION PROCESSES AND ECONOMICS

Steve Evans is professor and director of research in industrial sustainability at the Institute for Manufacturing (IfM) at the University of Cambridge. He spent 12 years in industry, rising to become engineering systems manager at Martin-Baker, the world-leading manufacturer of ejection seats. His industrial experience led to an emphasis on improving engineering performance and provided an excellent grounding for tackling complex, real-life problems.

References within this article can be found at cisi.org/rofmFeb21

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1. THE LINEAR ECONOMY

The global economy is often described as a 'take-make-waste' system and has long relied on inputs of cheap and available resources to create conditions for growth and stability. By 2030, the global middle class, defined as households with daily expenditures of between US$10 and US$100 per person in purchasing power parity terms (Kharas, 2010, p.6), is expected to surge by another three billion people and could grow to almost five billion people – nearly two-thirds of the global population – with almost all (85%) of this growth coming from Asia (Kharas, 2010, p. 27). According to a report on the circular economy by the Ellen MacArthur Foundation (EMF), 'this unprecedented rise in global demand for a finite supply of resources calls into question our current largely linear economic system.'

The current linear economy typically follows this path: natural resources are extracted from the environment, vast amounts of fossil fuel energy are then used to transport and process these raw materials into useful products, the products are marketed and sold to consumers, then used and finally disposed of in a landfill. For the most part, the waste is not 'returned to nature' in a sustainable manner. Afterwards, the same process repeats itself. This not only puts undue strain on limited landfill space, it also represents an enormous waste of useful material and energy, with a significant portion of the original resources extracted from the environment ending up as waste in the process.

In addition to these challenges, manufacturing gains are insufficient to generate real competitive advantage, there are increased security risks with longer global supply chains, and more stringent licensing requirements for production using 'virgin resources' (i.e. water, land, atmosphere). These factors are also encouraging corporations to move towards a model that decouples revenues from material input – the circular economy (EMF, 2014, p. 13).

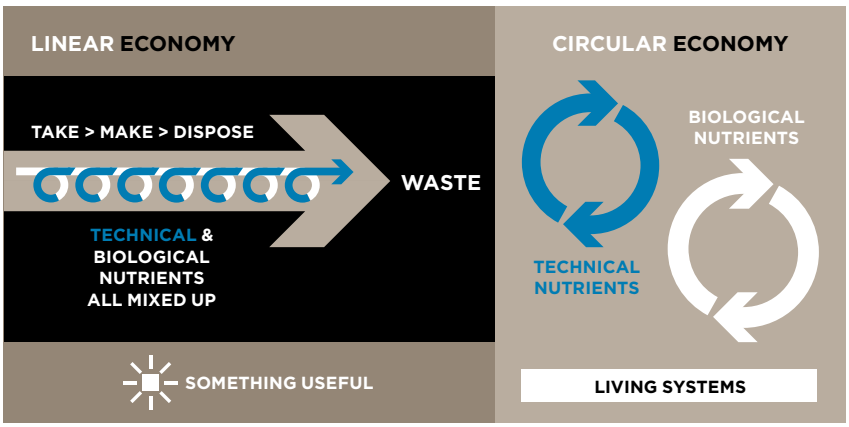
// MANUFACTURING GAINS ARE INSUFFICIENT TO CREATE REAL COMPETITIVE ADVANTAGE //

2. THE CIRCULAR ECONOMY

The EMF defines the circular economy as one that "seeks to rebuild capital, whether this is financial, manufactured, human, social or natural. This ensures enhanced flows of goods and services". The circular economy is a 'big picture concept' that at its core is about "keeping molecules in play" in an industrial system that is restorative by intention and design, according to the *State of green business* report (Makower, 2016). "It replaces the end-of-life concept with restoration, shifts towards the use of renewable energy, eliminates the use of toxic chemicals, which impair reuse and return to the biosphere, and aims for the elimination of waste through the superior design of materials, products, systems and business models", according to the EMF's *Towards the circular economy*, 2013. Figure 1 (below) contrasts the linear and the circular economy.

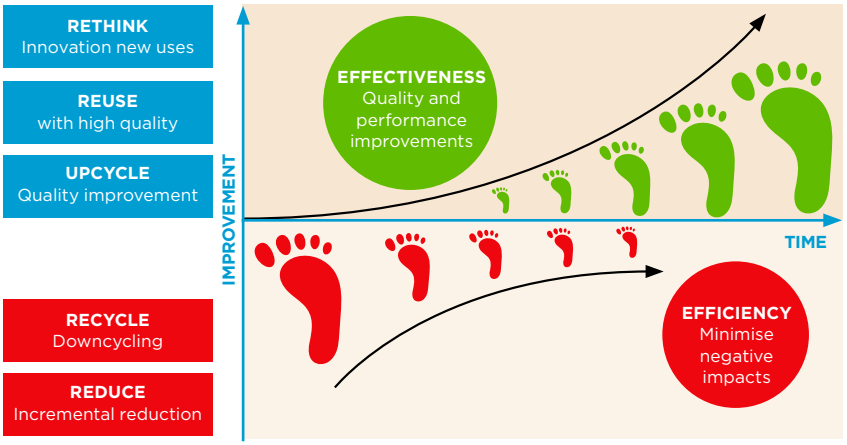
Sustainable business models reach beyond the simple notion of shareholder value maximisation to balance the economic, social, and environmental objectives of firms (Elkington, 1997). It is necessary to develop sustainable models that "operate within planetary limits and are sensitive to their role as economic,

FIGURE 1: THE LINEAR VERSUS THE CIRCULAR ECONOMY



Source: Ellen MacArthur Foundation

FIGURE 2: CIRCULAR ECONOMY POWERED BY CRADLE TO CRADLE



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The Circular Economy Powered by Cradle to Cradle®

environmental and social linchpins" (Clinton & Whisnant, 2014, p. 14). Sustainable business models seek to internalise social and environmental externalities (Den Ouden, 2012). Similarly, the circular economy concept internalises externalities by eliminating waste while also creating jobs along the way. The circular economy necessitates a fundamental change in our current systems of production and consumption of goods and services, embracing more productive and resilient systems and a shift from fossil fuels towards renewable energy.

3. DEVELOPMENT OF THE CONCEPT

Several schools of thought have contributed to the development of the circular economy concept, while its practical applications to modern economic systems and industrial processes have gained momentum over the past several decades as notions of sustainability have emerged and gained interest from both academia and the corporate world. The schools of thought providing the conceptual foundation include: regenerative design; performance economy; cradle to cradle; industrial ecology, and biomimicry.

Regenerative design

This replaces the present linear system of throughput flows with cyclical flows at sources, consumption centres, and sinks (Lyle, 1994, p. 10). Pioneered by landscape architecture professor John Lyle, it is "a system of technologies and strategies, based on an understanding of the inner working of ecosystems that generates designs to regenerate rather than deplete underlying life support systems and resources within socio-ecological wholes". In contrast to the one-way throughput system, a "regenerative system provides for continuous replacement, through its own functional processes, of the energy and materials used in its operation" (ibid.). What might be considered waste in other systems is used here as input.

// WHAT MIGHT BE CONSIDERED WASTE IN OTHER SYSTEMS IS USED HERE AS INPUT //

Performance economy

Swiss architect Walter Stahel developed the performance economy, a business model that enables businesses "to achieve higher competitiveness with greatly reduced resource consumption and without an externalisation of the costs of waste and of risk" (Stahel, 2008, 127). Thus, instead of selling items to customers, companies retain ownership of the physical product and customers pay only for the use they derive from it, encouraging firms to make long-lasting wares (e.g. Michelin sells mileage to customers instead of tires and when a tire is no longer roadworthy, clients receive a replacement and the company remanufactures the old tires) (Shah, 2016).

Cradle to cradle

Stahel also developed the concept of cradle-to-cradle manufacturing, where goods are made, dismantled, and then remade into new products. Cradle to cradle involves designing products so when they are at the end of their useful lives their components can be used for another productive purpose that does not negatively impact the environment. Accordingly, the process aims to keep all materials used in the production and manufacturing of products in continuous cycles, use 100% renewable energy, and promote diversity in products and the materials used to create them, explains William McDonough in a TED 2005 talk. As in nature, all 'waste' is actually 'food' in cyclical systems; the traditional 'growth is limited' message is redefined to 'continuous and healthy growth is an option' (Kienbaum & EPEA, 2014).

Industrial ecology

According to Graedel and Lifset (2016), industrial ecology started with a 1989 publication by General Motors researchers Robert Frosch and Nicholas Gallopoulos titled *Strategies for manufacturing*, in which they discuss strategies to create a sustainable industrial ecosystem. Frosch and Gallopoulos conclude that "The traditional model of industrial activity – in which individual manufacturing processes take in raw materials and generate products to be sold plus waste to be disposed of – should be transformed into a more integrated model: an industrial ecosystem. In such a system the consumption of energy is optimised, waste generation is minimised and the effluents of one process … serve as the raw material for another process."

Branches of industrial ecology now include life-cycle assessment (i.e. from harvesting materials to the disposal/recycling of the finished goods, a framework for which has been standardised by the International Organization for Standardization);

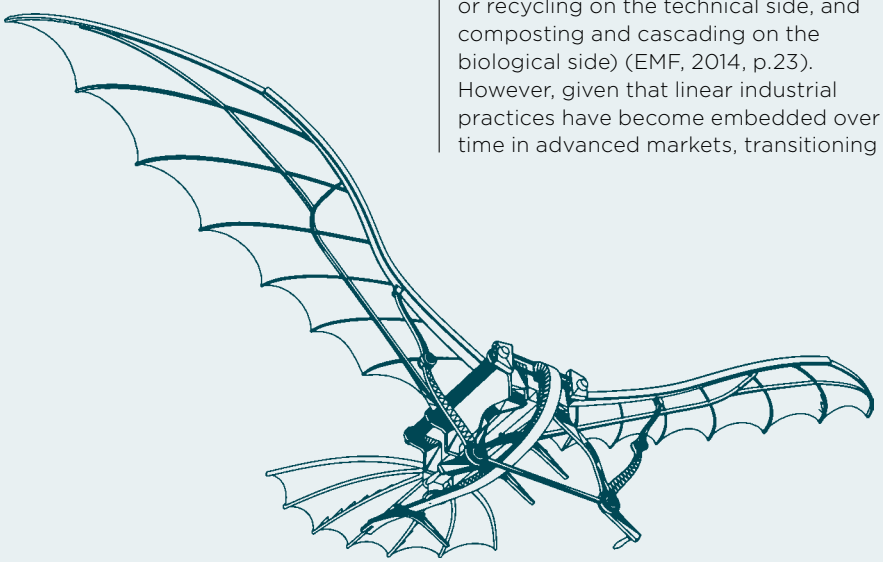
material flow analysis; urban metabolism, which sprung from studies of Hong Kong's resource flows in the 1970s "to become familiar with the metabolism of our cities" (Newcombe et al, 1978; Warren-Rhodes & Koenig, 2001); and environmental design, important because it is estimated that over 80% of all product-related environmental impacts are determined during the design phase (European Environment Agency, 2011, p. 85).

Biomimicry

The Biomimicry Institute defines biomimicry as an approach that seeks sustainable solutions to human challenges by emulating nature's time-tested patterns and strategies. The idea is to use design solutions that nature has created after about 3.8 billion years of evolution to create sustainable products, processes, and policies. For centuries, humankind has been inspired by nature, and biomimicry argues that nature is the best source of innovation as it holds a plethora of ecological problem-solving experience (Aziz & El sherif, 2016). Leonardo da Vinci's study of birds in his design of a flying machine is a well-known biomimicry example. There are two main theoretical approaches in biomimicry: design looking to biology, a top-down approach (López-Forniés & Berges-Muro, 2011), and biology influencing design, a bottom-up approach – for example, the burdock plant burrs that resulted in Velcro's invention.

Aziz and El sherif (2016, 710) also highlight technology's key role in biomimicry as a tool to help explore and explain nature's complexity. For instance, the formation of coral reefs inspired US-based bioMASON to grow bricks from bacteria to make biocement. Benyus elaborates on the three essential principles of biomimicry: nature as model, nature as measure, and nature as mentor.

These ideas provided the foundation for the circular economy concept that enables us to redefine the linear economy and create a sustainable economic model.



// LEONARDO DA VINCI'S FLYING MACHINE IS A WELL-KNOWN BIOMIMICRY EXAMPLE //

4. THE BENEFITS OF THE CIRCULAR ECONOMY

A circular economy approach offers benefits to both developed and emerging market economies. Benefits for developed economies include: a path to resilient growth, a systemic answer to reducing resource dependency, and reduced exposure to resource price shocks as well as societal and environmental externality costs that are not picked up by companies. Also, a circular economy would shift the economic balance away from energy-intensive materials and primary extraction and create a new sector dedicated to 'reverse cycle activities' (e.g. reuse, remanufacturing or recycling on the technical side, and composting and cascading on the biological side) (EMF, 2014, p.23). However, given that linear industrial practices have become embedded over time in advanced markets, transitioning towards the circular economy can be quite challenging.

The EMF also notes that as many emerging markets are not yet 'locked into' the linear economy, they have the chance to design and build new circular economy businesses and industries. Particularly, they have an opportunity to create resource-efficient industries, and leapfrog straight into establishing circular setups when developing their manufacturing-based sectors. Also, as many emerging market economies are also more materials-intensive than typical advanced economies, they could expect even greater relative savings from circular economy models (Ibid.).

McKinsey estimates that by adopting circular economy principles, Europe could not only benefit environmentally and socially but could also generate a net economic benefit of €1.8tn by 2030. A circular economy strategy would allow Europe to grow resource productivity by up to 3% annually and generate a primary-resource benefit of as much as €0.6tn per year and €1.2tn in non-resource and externality benefits. Europe's current developmental path – linear economy – costs could fall from €7.2tn to €5.4tn.

While the circular economy has important benefits, it also requires important changes from organisations: rethinking business models in order to create a pathway from a linear to a circular economy model; adapting supply networks as essential circular components are often missing from a linear value chain; and motivating employees to convince them to share the change of the business model (Kienbaum & EPEA, 2014). For an organisation to transition from a linear to a circular model, it is important to consider the evolution of organisational change theory research.

Lessons from the few remaining Western conglomerates, such as General Electric and Siemens, show how waste generated in a particular business can be used as a resource into another business, moving the group towards a more sustainable entity.

BUILDING THE RIGHT BOARD TO RESPOND TO THE CLIMATE CHALLENGE

A TEAM OF RESEARCHERS AT THE UNIVERSITY OF CAMBRIDGE HAS PROBED HOW FINANCE BOARDS ARE RESPONDING TO THE CLIMATE CHALLENGE – WITH IMPORTANT LESSONS IN THIS YEAR OF COP26

Richard Burrett, Sam Anthony, Beate Van Loo-Born, David Jones, Clare Nickson-Havens, Veronica Palmgren, Nawaz Peerbocus

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This research paper seeks to answer the question 'what board characteristics are driving the climate change response of firms in the financial sector?' To answer this, a review of relevant academic and practitioner literature was undertaken followed by a survey and semi-structured interviews to collect insight from primary data.

Under its fiduciary duty, the board is responsible for overseeing and ensuring the long-term success and strategic direction of the firm and is therefore in a crucial position to impact a firm's climate response. Three overarching themes emerged from the literature review on board characteristics driving a firm's climate response: board structure; board diversity and mindset; and board processes. These themes were investigated for underpinning characteristics, to respond to the research question.

The literature review revealed that drivers of climate response are not well defined, which provides challenges for establishing causation between board characteristics and financial firms' climate response. Board structure appeared to be of low importance, with separation of CEO and chair roles the only characteristic found to positively influence climate response. Board processes are necessary to enable boards to meet their fiduciary duty, but there was no consensus on characteristics necessary to achieve this. However, both the literature review and the primary research provided evidence that board diversity, including gender, age, and expertise, positively contributes to a firm's climate response, as does a sustainability mindset. Furthermore, our primary research found that aspects of diversity such as gender and age are associated with a sustainability mindset.

Our research also highlights the importance of the chair in driving the firm's climate response. When the chair possesses a sustainability mindset, this has an impact on whether climate is included on the board agenda and ultimately in the firm's climate response. However, even a climate-literate chair with a sustainability mindset still needs to bring other directors along on the journey. These findings make a useful contribution to the existing knowledge regarding board characteristics positively impacting climate response.

The implications of our findings could be relevant to nominations committees when seeking to recruit board directors, and climate should be included in both board and director skills evaluation. Findings from the interviews highlighted that there is an opportunity to educate board recruitment firms on the importance of a sustainability mindset as an attribute for board appointees. Although the definition of this is subjective, literature includes dimensions such as creative thinking, inclusive thinking, connection with nature and partnering, as well as a good level of climate knowledge. These features can be targeted in the recruitment process.

// BOARD DIVERSITY, INCLUDING GENDER, AGE, AND EXPERTISE, POSITIVELY CONTRIBUTES TO A FIRM'S CLIMATE RESPONSE //

The relative immaturity of climate as a systematically integrated board topic opens research opportunities into how a sustainability mindset can be fostered at board level. We recommend it be pursued through education and awareness, targeted recruitment, or by enhancing the gender and age diversity of the board. Given the board's fiduciary duty to the stewardship of the firm and that regulators have indicated that financial firms' climate-related disclosures will continue to increase, we recommend further research on the connection between sustainability mindset, board diversity and climate response to contribute to the body of knowledge on effective climate governance and management in financial firms.

BOARD STRUCTURE

Interviewees and survey respondents were asked about the inclusion of climate on board committees. The majority of survey respondents indicated that climate should be integrated into all board decision-making. Some interviewees suggested that risk and audit committees or sustainability committees should have primary responsibility, but that the full board ultimately has accountability. When asked specifically in which committee climate should be considered, survey respondents expressed preference for the risk committee, followed by the remuneration and audit committees, but also a clear majority saw the need for a separate climate advisory committee. However, sustainability committees were generally not considered necessary at board level, but were seen as useful at the executive level, as long as climate response is integrated into board committees. Interviewees and survey respondents agreed that a dedicated group at either board or executive level needs to be responsible for driving climate response and many interviewees noted that the maturity of an organisation's processes influences where in its structure the board considers the issue.

Participant responses reflected the lack of consensus in the literature. While best practice recommendations have highlighted the benefits of a dedicated climate committee, the literature indicated that responsibility for

sustainability can be allocated to dedicated committees, other established committees (such as risk), and the board itself. The diversity in approaches is also reflected by this study's participant responses. Furthermore, the literature provides mixed results for the impact of dedicated committees in driving climate response. Interviewees and survey respondents stressed the requirement that climate receives focus at the board level, but that it can be integrated in various ways. This leads to the conclusion that specialised climate committees are not appropriate for all firms but should be considered within the firm's specific context.

Interviewees and survey respondents were asked about the significance of board independence, CEO duality, tiering and size. When asked about board independence, only half the survey participants considered it important but also articulated that the skills map is just as important as independence. One noted that shared values are more important than independence, while another mentioned that board independence potentially creates faster decision-making, which could be important when addressing climate response.

In regard to CEO duality, an interviewee suggested that keeping chair and CEO as separate individuals is deemed best practice, as it reduces over-dominance of one personality and allows independent directors greater influence if the CEO is on the board but has misaligned values. Generally, survey respondents did not articulate a clear preference, nor did they collectively connect CEO duality to a better or worse climate response. One survey comment agreed that separation of roles may become more important in times of crisis.

One interviewee stated that a unitary board is preferable to a two-tier structure to ensure there is only one conversation. About half of the survey respondents agreed with this statement, the other half being unsure. Survey participants referenced corporate values and leadership as more important than structure and one interviewee pointed out that having board directors who are or have been CEOs (of other firms) is ideal as they tend to have a systems view and are used to focusing on multiple issues at once.

Board size appeared to be of little importance to survey respondents. Most believe that "it depends" on the organisation. Notably, comments relating to board structure within the survey often alluded to the significance of leadership; one respondent said "climate governance extends to conviction of its leaders" rather than the size of the board. When asked about tiering, two respondents referenced values and leadership as more important than structure and, when asked about the separation of the board and the CEO, it was pointed out that the "CEO sets the mindset and internal attitude towards climate governance".

// A CLEAR MAJORITY SAW THE NEED FOR A SEPARATE CLIMATE ADVISORY COMMITTEE //

Participant responses portrayed a lack of consensus as to the relationship between climate response and board independence, tiering and size. This reflects the literature which also demonstrated mixed results. While the literature indicates separating the role of CEO and chair positively drives climate response, participants, except for one interviewee and one survey respondent, did not believe it was significant. This could reflect the fact that CEO duality and board tiering do not feature in the jurisdictions covered in our primary data. While specific structures did not appear to be important to respondents, a theme of leadership and mindset arose, an area explored further below.

Within board structure, there appears to be no one optimal approach for driving climate response, suggesting the importance of firm-specific characteristics. The lack of consensus on structure may also indicate that climate is of such significance that it should permeate all board committees and not be allocated to specific structures. One implication of this finding is that addressing only structural aspects of the board will not be sufficient to drive climate response.

BOARD DIVERSITY AND MINDSET

Interview participants and survey respondents were asked about the significance of board diversity and mindset to their firm's climate response. In the interviews, many articulated that diversity of thinking could be increased through addressing the lack of women on boards, highlighting the role of gender diversity in broadening perspectives. "Boards should put in place structures that ensure they continue to map the skills and attributes to maintain diversity." Cultural, gender, local and international diversity are all important in providing a range of perspectives. Including younger directors was also seen as important, as knowledge of sustainability and climate change tends to rest with younger people: "Older people are risk averse but, by ignoring climate change, are ironically creating more risk." "Broader diversity ensures greater likelihood of understanding what information should be received by management." Survey respondents did not feel strongly about gender diversity per se but articulated the importance of 'thought' diversity (the avoidance of groupthink) for a firm's climate response. Diversity of thinking was mentioned as important by interviewees and the importance of mindset was highlighted, with 'sustainability mindset', 'stewardship mindset', 'national and international mindset' all referred to. "Forward-thinking people with a positive mindset" are needed to take account of opportunities as well as risks of climate change. Several participants thus confirmed the link between diversity and sustainability mindsets.

With regard to leadership, interviewees and survey respondents viewed both the chair and the CEO as crucial in influencing a firm's climate response. The chair holds the pivotal role as either promoter or blocker of climate response. Interviewees considered it necessary to have the chair and at least one other director supporting climate response, and stated that if the chair and one other director are climate change deniers, it doesn't matter if you have several directors who want to promote the issue, it won't get on the agenda. In contrast, one chair described bringing other directors on the journey, describing himself as 'a mole' within the board, "chipping away at their insecurities" and warning that even as chair, "you have to

temper how strident you are or you will lose credibility". This was echoed by another chair who warned of the risk of non-believing directors "digging in", becoming more entrenched in their view if you try to move them on too quickly.

The personality of the chair was viewed as important, regardless of whether or not they are a promoter of climate response, with one respondent noting that their chair, despite being a believer, "is a control freak who is threatened by the expert director" that was brought in specifically to assist with climate response. Another respondent said: "It doesn't matter what we think as long as we understand what (the chair) wants us to achieve." The need for balance within the board was also noted. The CEO also has an important role, with some saying that the process should be driven by management but with the tone set by the chair in addition to the CEO. One interviewee noted that the chair and CEO must set the tone but build expertise on the board. In the survey, all respondents felt that corporate values need to be aligned to climate response, voicing that it should be portrayed as a priority internally and externally. Interestingly, respondents had different reasons for this assertion, ranging from "it has an impact on everyone; critical topic for the world" to "should be integrated in business decisions … not corporate values". One respondent noted that climate response is simply part of "rational business".

The importance of diversity in driving climate response was clear, but there appeared above all a focus on diversity of mindset. For gender diversity, the literature confirms it improves climate response and interviewees supported this conclusion, although consensus was lacking in the survey. Findings in the literature on the relevance of age diversity were mixed but highlighted the generational divide on climate issues. This theme emerged in participant responses, supporting the view that age diversity can improve climate response. Literature also highlights that diversity helps to introduce different mindsets, driving firms' climate response, and several respondents identified this connection. The mindset of specific leadership roles has only been partially acknowledged within literature, while responses of interviewees indicated its importance. Although not explicitly asked, some survey respondents noted the important role of leadership in driving climate response. The chair's mindset (and the CEO's to a lesser extent), was deemed to be pivotal because it ensures climate is considered within the board's agenda (and corporate values are aligned), although participants noted that if people in these roles are alone in their views, it can be difficult to drive climate response.

// "THERE IS NO BANDWAGON UN-JUMPED UPON" //

Interviewees and survey respondents were asked about the importance of climate education and knowledge on the board. Most survey respondents felt there should be an expert on the board. The majority responded that everyone on the board should have the same level of expertise (through training) and over half believed that expertise should be brought in via external advisers or through recruiting an external expert to join the board. Many interviewees mentioned the use of both internal and external experts, but there was a concern the use of experts could be a box-ticking exercise rather than a sign of better climate governance – "there is no bandwagon un-jumped upon", which can sometimes be "unhelpful and expensive". In terms of internal efforts, annual training programmes, site visits and expert presentations were mentioned. One interviewee firmly believed it is the management's job to bring in this expertise and another reinforced this, saying, "if it hadn't been pushed up the organisation it wouldn't have been discussed at all (at board level)".

Climate capability was not viewed as an explicit skill for directors. "A sustainability mindset is what is needed" although, according to one chair, "I don't recall ever having 'mindset' or anything capturing mindset on the criteria list for nominations, even though this is what is important rather than (other forms of) diversity". Some interviewees stated climate capability should be only one of many skills a director might have rather than the predominant one, but one interviewee stated that it is necessary to have at least one expert – although this is dependent on whether the firm "is impacted by" climate change – and to disclose who this person is. The role of the nominations committee in succession planning and assessing skills gaps and the low standard of board recruitment consultants was also noted. Other external entities engaged with by boards include climate scientists, non-governmental organisations, insurers, industry bodies and regulators, peers, and shareholders.

Climate expertise was found to be an important consideration in addressing climate response among participants, whether from external experts or improving knowledge internally. The literature supports this conclusion, indicating that board expertise and climate response are linked. Furthermore, participant responses highlighted the lack of emphasis placed on directors' climate expertise and mindset. Recruitment of climate-literate board members is a theme underexplored by existing literature.

In conclusion, board diversity goes beyond traditional measures of diversity (such as gender), to encompass factors such as expertise and mindset. Mindset, particularly for chair and CEO roles, appears to be a pivotal factor driving climate response within the finance sector.

BOARD PROCESSES

It was generally observed by interviewees that the board, as a collective, has a fiduciary duty for the short- and long-term outlook for the firm, that negative externalities are minimised, and that boards are accountable for ensuring they have a robust process in place to show they have considered climate: "The board should be aware of the readiness of the organisation to implement regulatory requirements and other commitments." Climate response was considered the joint responsibility of the entire board by many interviewees as well as most survey respondents.

For a copy of the full survey from which this extract is taken, please visit cisi.org/rofmFeb21.

A recent (January 2021) webcast featuring most of the research team is now available on CISI TV, and they will be following this up with further events for members – please see the CISI listings pages for details.

THE ASTONISHING RISE OF GREEN CRIME

AVA TAMBALA, A FINAL YEAR STUDENT AT A UK SIXTH FORM COLLEGE AND THE 2020 RECIPIENT OF THE BRIGHT HORIZON INTERNSHIP, ON WHY 'GREEN CRIME' MATTERS TO THE FINANCIAL COMMUNITY

The Bright Horizon programme was launched by Refinitiv in October 2020, and offers talented students from under-represented communities practical work experience and the chance to meet with senior leaders across the organisation.

Ava Tambala's paper, written during her internship, draws on insights and feedback from John Cusack, chair, Global Coalition to Fight Financial Crime; Alexandria Reid, research fellow, Royal United Services Institute; Jon Godson, assistant director, International Air Transport Association (IATA); and Che Sidanius, global head of financial crime and industry affairs at Refinitiv.

WHAT IS GREEN CRIME?

Green crime can be defined as illegal activity that threatens biodiversity, damages the environment, impacts supply chains and poses a danger to global stability and security. Examples of green crime include illegal mining, illegal fishing, illegal wildlife trade, illegal logging and waste trafficking. This form of crime has always been prevalent, but has started to gain more widespread traction in recent years (see reference to the video at the end of this paper).

Acting in his capacity as global head of financial crime compliance at Standard Chartered, in 2016, John Cusack commissioned a comprehensive threat assessment across 60 countries to uncover the types of financial crime threats that affected the bank the most. The results indicated that criminal activity associated with green crime was a larger generator of financial crime proceeds than originally anticipated (see Refinitiv's webinar on the rise of green crime). Green crime has become a growing transnational threat estimated to cost up to US$258bn a year. According to the World Wildlife Fund (WWF), wildlife trafficking ranks fourth in the top five most lucrative illicit activities in the world.

While green crimes are committed worldwide, they often most acutely affect low-income countries, with the beneficiaries of those crimes laundering the profits using the global financial system. Alexandra Reid cites a 2020 World Economic Forum report that warns that over 50% of global GDP is either moderately or highly exposed to the loss of nature. Moreover, data from the WWF shows that the population of wild species has declined by 60% over the past 40 years alone. While this decline is not entirely due to green crime, it has made a substantial difference. As a result, we are on track to miss 80% of the UN Sustainable Development Goals, including eradicating poverty and hunger, and promoting health and wellbeing alongside goals focused on the environment.

WHY IS THIS AN IMPORTANT TOPIC?

Environmental crime has historically been overlooked. We must reach the highest levels in terms of law enforcement and policymaker priorities to tackle this problem. A Refinitiv 2020 report on third-party risks reveals that 65% of companies know or suspect that they have relationships with third parties that may have been involved in environmental destruction related to environmental crime or wildlife issues. Furthermore, 61% of participants believe that there is little prosecution, even if they have breached third-party related regulations.

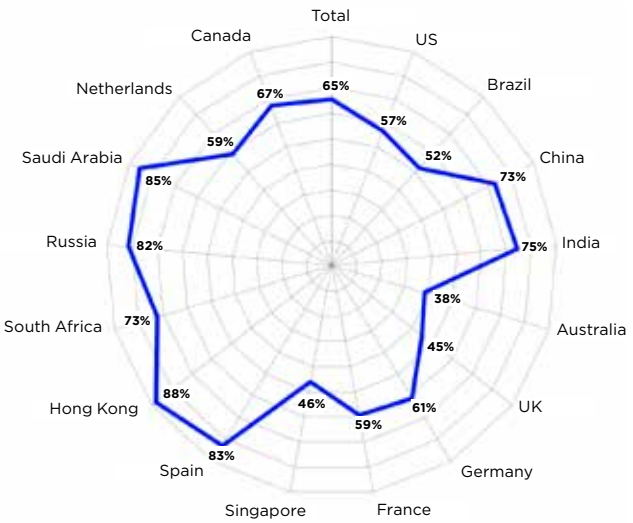
A lack of prioritisation and intelligence sharing by law enforcement and policymakers has given the private sector few incentives to focus on green crime to date. Promisingly, 93% of Refinitiv survey participants state that if there were greater enforcement action taken in relation to third-party risk, they would increase their spending.

THE RELATIONSHIP BETWEEN GREEN CRIME AND CLIMATE CHANGE

The unprecedented impact of the Covid-19 pandemic has created unforeseen circumstances. In effect, organisations have been more attentive to their role in combating climate change. In some cases, this has been implemented through discrete aims, such as achieving carbon neutral status. In other cases, seeing the fragility of the

FIGURE 1: ILLEGAL ACTIVITIES

Do you know or suspect any of your third-party suppliers or their suppliers have been involved in green crime activity?



Source: Refinitiv

natural world and the reliance we have on it has encouraged companies across the private sector to take a more systemic approach and use the pandemic as a time to reflect on business resilience and consider implementing a green recovery strategy. Nonetheless, businesses and organisations can find it difficult to see the link between climate change mitigation, adaptation and their efforts in tackling green crime.

Visible examples of the relationship between these issues include deforestation and illegal logging. According to WWF, illegal logging accounts for 50–90% of all forestry activities in producer tropical forests, such as those of the Amazon basin, Southeast Asia and Central Africa, and 15–30% of all wood traded globally.

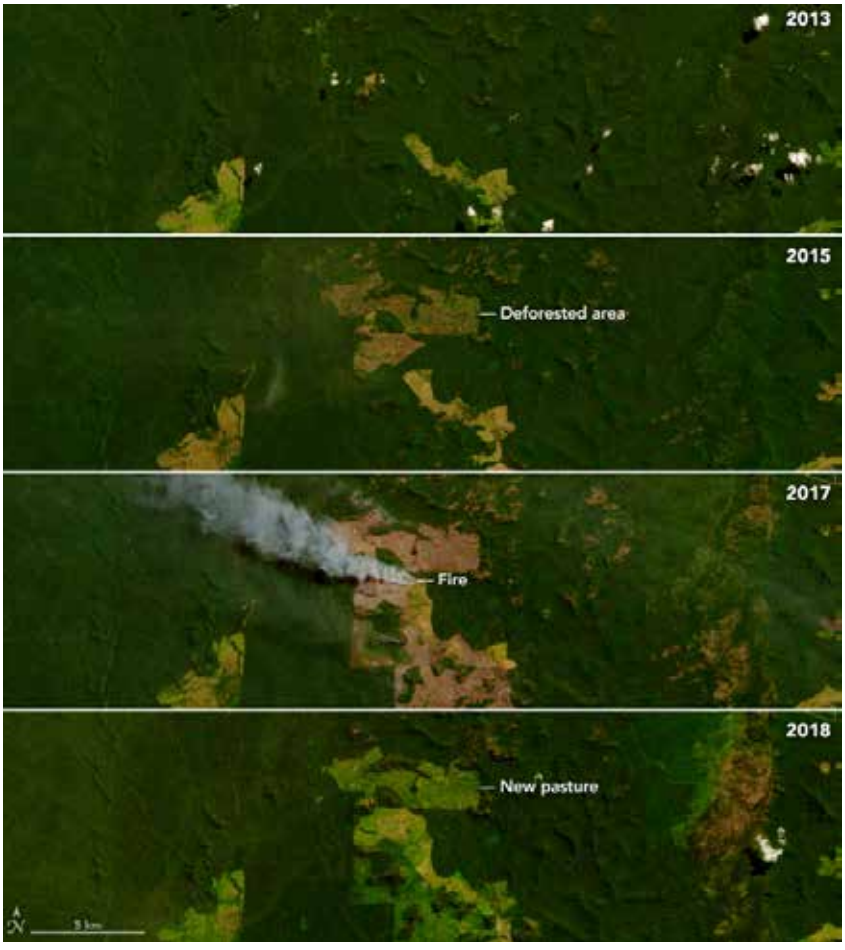
Satellite imagery can help expose the physical effects of deforestation. The NASA campaign 'Large-Scale Biosphere-Atmosphere Experiment in Amazonia' examined the interconnections between Amazon ecosystems and how they were reacting to rapid deforestation, global warming and cycles of drought.

// ONE IN EVERY FIVE FISH IS CAUGHT ILLEGALLY //

John Cusack points to evidence showing that one in every five fish is caught illegally, and illegal, unreported and unregulated fishing (IUU), as defined by the UN's Food and Agricultural Organization, is rarely treated as an important crime. IUU generates an estimated US$10–23bn a year, with much of the profit and the goods themselves being laundered through the legitimate supply chain. A lack of supply chain scrutiny and poor law enforcement have enabled this crime to flourish on a transnational basis. Within fisheries, other forms of organised crime, such as human trafficking, modern slavery and fraud have taken place. However, little attention has been paid to the extent to which mitigation measures have limited the role of organised crime in the IUU fishing industry. The two major threats posed to fisheries consist of persistent IUU activity and climate change, according to Alexandria Reid, research fellow at the Royal United Services Institute.

Ocean surface temperatures are warming 40% faster than previous estimates, according to a *Scientific American* article from January 2019. Increasing temperatures have led to ocean acidification and bleaching, as well as the migration of marine resources, which can generate new opportunities for IUU fishers. Both pressures can create a feedback loop where undetected catches lead to overfishing, which can cause a decline in fish stocks. This means that fishers need to use more environmentally damaging techniques and may resort to forced labour as a form of cutting costs. And yet these practices are rarely ever met with fines proportionate to the crime, given the sizes of the profits involved, or criminal sentences that would qualify under the UN Convention against Transnational Organized Crime. Reid believes that due to weak law enforcement, "over one-third of global fish stocks are estimated to be shed beyond biologically sustainable limits."

FIGURE 2: AMAZON DEFORESTATION PATTERNS



Source: Visible Earth. NASA Earth Observatory images by Lauren Dauphin, using MODIS data from NASA EOSDIS/LANCE and GIBS/Worldview and Landsat data from the U.S. Geological Survey

GREEN CRIME PERSPECTIVES FROM THE AIRLINES SECTOR

IATA is a trade association for 290 airlines; it aims to improve safety and ensure the sustainable growth of the airline sector. The Covid-19 pandemic has threatened airlines' ability to survive but, as the sector begins to recover, the relationship between wildlife trafficking and