Marsh

Global resource consumption and its impact on the ESG agenda

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Contents

Executive summary

When incomes and economies grow — be it on a personal, country, or global level — there is a natural increase in the consumption of goods and services. While long taken as a sign that positive change is occurring, unfortunately, increasing consumption can also have serious implications for business strategies, notably those related to environmental, social, and governance (ESG) issues.

This paper explores consumption trends from the perspective of global development and changing demographics. Increasing consumption has wide-ranging impacts in terms of risks related to climate change and biodiversity, key components of the 'E' in ESG. In fact, at present, consumption levels are hampering the ability of many organisations to realise their ESG goals.

One proxy for the growth in consumption is global GDP, which is in turn linked to and compounded by trends in population growth and composition. The growth in GDP tracks to an unprecedented increase in the consumption of goods and services and, based on current business models, is leading to increased greenhouse gas (GHG) emissions, biodiversity damage and loss, and more. As developing nations strive for sustainable growth, they will need support from both public and private sources globally.

Among the tangible risks that increased consumption poses to businesses is the depletion of natural resources beyond equilibrium, including through climate-related losses — such as wildfire, flood, and rising sea levels — or the quieter loss of biodiversity.

As organisations move their ESG agendas forward, they should keep the following in mind:

Investors could make a shift to align their timescales for a return-on-investment (ROI) with the long-term issues related to consumption pressures. Currently, long-term risks related to consumption trends are typically deprioritised in favour of shorter-term motivations.

Corporate supply chain strategies will benefit by supplementing traditional metrics, such as creditworthiness and price, by layering in systemic risks and the risks associated with upwards consumption trends.

Organisations should consider the implications of physical risks on the business and operating model of the firm, with the added optic of how consumption may exacerbate these risks. Increased consumption and the associated use of fossil fuels are directly linked to climate change and, in turn, physical risks.

Having strong ESG frameworks can support risk mitigation strategies designed to protect organisations against future risk.

Business strategies should include the identification, quantification, and mitigation of the consequences of increased consumption.

Introduction

It sounds simplistic to say that as the world's population continues to increase, so does the consumption of goods. But while it may be a simple concept, it's one that businesses should pay close attention to as it can have serious implications for business strategies, notably those related to environmental, social, and governance (ESG) issues.

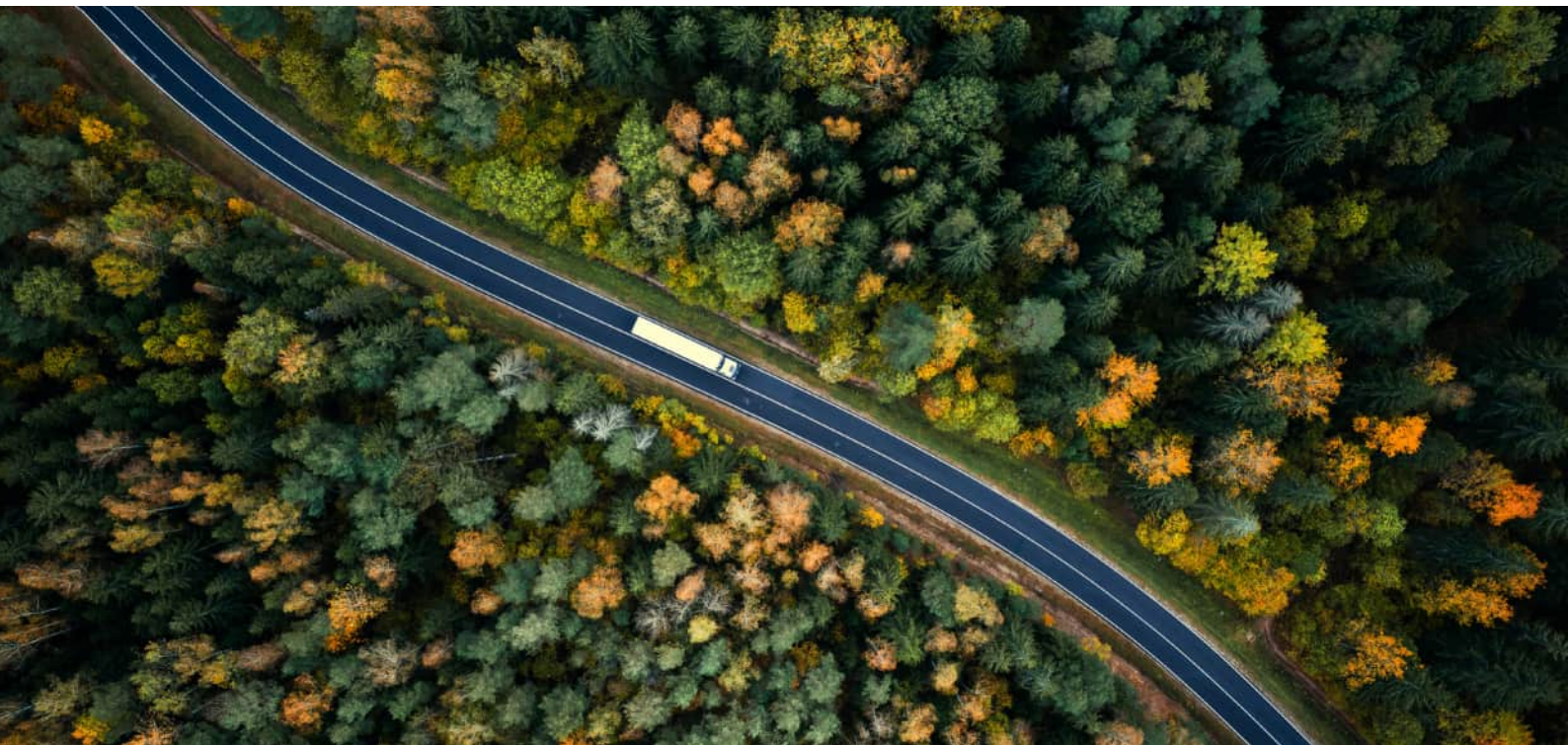
In our rapidly evolving world, the individual's desire to 'have more things' drives much of the global economy. According to the World Bank, global consumption expenditure grew by almost 170% from 2001 to 2021, a trend that can be attributed to population growth and economic development.

As the average human lifespan increases and developing economies continue to grow, consumption of goods and services will continue to increase. While growth-driven development can improve global standards of living, drive innovation, and meet corporate growth objectives, the consequences of unpriced externalities come with a downside.

As has become increasingly clear, one way in which the cost of consumption manifests is in the level of pollution and other environmental degradation, which has permanently damaged ecosystems. And yet, societal and cultural norms in the global north spur over-consumption, while growing demand strains supply chains.

Unabated growth in consumption presents a significant risk to achieving a carbon net-zero economy and other ESG goals. To facilitate the transition to a sustainable economy and mitigate exposure to ESG-related risks, it's important to frame the narrative in terms of consumption.

This paper explores issues related to ever-increasing consumption, the potential impact on companies and societies, and ways to manage the risks going forward.



Economic development and growth: The natural impetus driving increased consumption

As the global economy develops, nations can benefit from increased standards of living, improved trade relations, and access to a variety of resources.

When economic development brings an increase in real incomes and/or wages, individuals typically purchase and consume more goods and services. There is a positive correlation between gross domestic product (GDP) and consumer spending.

GDP is perhaps the most widely used measure of economic development and is typically relatively stable, rising slowly over time; it can drop in times of economic turmoil, due to such issues as macro shocks, war, famine, trade battles, and pandemics. Of note, during COVID-19, economic productivity fell to -3.1%, then made a swift recovery in 2021, reaching 9% (see Figure 1), a movement that bucked the long term trends.

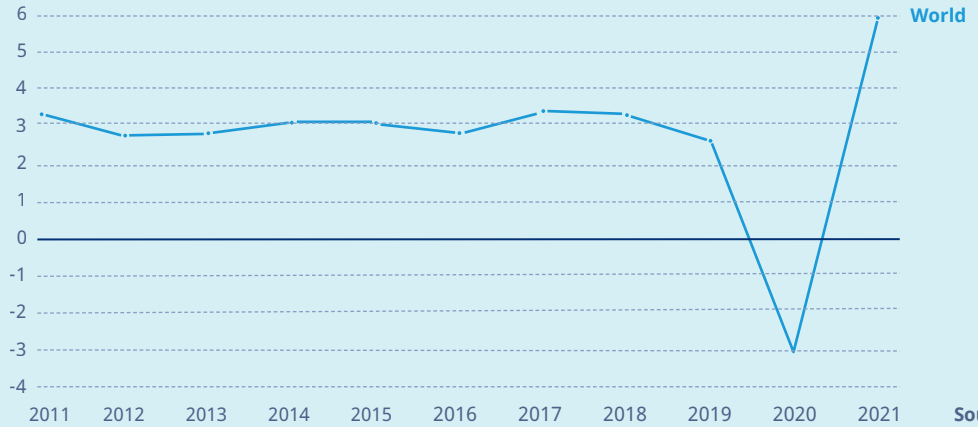
According to provisional estimates reported by the OECD, GDP in OECD member countries rose by 0.3% quarter-on-quarter in the fourth quarter of 2022, down from 0.4% growth in the previous quarter. Quarterly OECD growth rates remained weak throughout 2022, in a context of high inflation and rising interest rates.

Despite the growth in world GDP, a significant proportion of countries today are still considered developing. In 2022, 137 of the 217 countries and territories tracked by the World Bank were classified as developing, while 80 were deemed high income. Growth is top of the agenda for these developing countries in order to improve standards of living for their people.

The global economic system is built around ever-evolving technology and increasingly efficient trade systems. Nations are able to specialise in the production of specific goods or services to profit from exports and drive growth, while buyers are able to purchase an array of goods and services via global supply chains. Improved communications technology and advancements in data-driven insights allow nations to more easily identify new opportunities to drive economic development.

01| GDP growth (annual %)

World Bank national accounts data, and OECD National Accounts data files.



Source| World Bank

GROWTH OF THE FOUR ASIAN TIGERS

The economic growth of the 'Four Asian Tigers' over the last 50 years serves as a model for many developing nations today. Singapore, Hong Kong, South Korea, and Taiwan have experienced a high rate of sustained growth since the 1960s, largely driven by industrialisation and favourable investment and export policies.

The four countries achieved an annual growth rate of 7.5%, on average, across three decades to reach 'developed' status. Following Japan's example, these countries also invested in education and infrastructure to drive development. Hong Kong expanded the domestic textile industry to export garments, and subsequently focused on electronics and plastics. Singapore built industrial estates and offered tax incentives to expand the domestic manufacturing sector.

The economic growth of the 'Asian Tigers' correlates with upward trends in consumption and consumer spending across the four nations.

Source| Four Asian Tigers. Corporate Finance Institute.

Consumption and ESG goals

To realize ESG commitments, businesses and societies will need to develop new models for economic development. For example, many countries have benefitted economically from the growth of the textile industry, yet there have been potentially detrimental ESG impacts. The fashion industry worldwide produces an estimated 10% of human-generated carbon emissions and is the second-largest consumer of the world's water supply.

Growth driven by manufacturing in general — especially where it is based on the use of primary resources — can lead to environmental damage including increased greenhouse gas (GHG) emissions, biodiversity damage and loss, and water pollution. Most of the developed world has driven growth through industrialisation, sustaining collateral environmental damage. As developing nations strive to grow sustainably — which is likely to be more expensive than current methods — they will need global support, from both public and private sources, to promote equitable solutions that allow for all agendas to be met.

Government incentives are increasingly being directed to sustainable development. For example, in 2022, the UK Government committed UK£7.2 million to a new Nature Positive Economy programme for developing economies, which aims to "embed nature positive decision-making within governments, banks, businesses and financial institutions" to encourage sustainable economic development.

Attracting private investment typically proves more challenging due to a more complex risk environment from factors such as exchange rate risk, political risk, and execution risk. As a result, projects may not meet the investment criteria set by private investors. To help remediate this, the UN Sustainable Stock Exchanges Initiative aims to improve ESG disclosure in emerging markets to improve transparency. This attempt at improving clarity on ESG factors aims at bridging the gap on a new range of risk factors that may make material impacts on valuations, and hence on investment decision making cross-border. These measures may go some way to maintaining efficient market theory, and help prevent asymmetry of information between buyers and sellers.

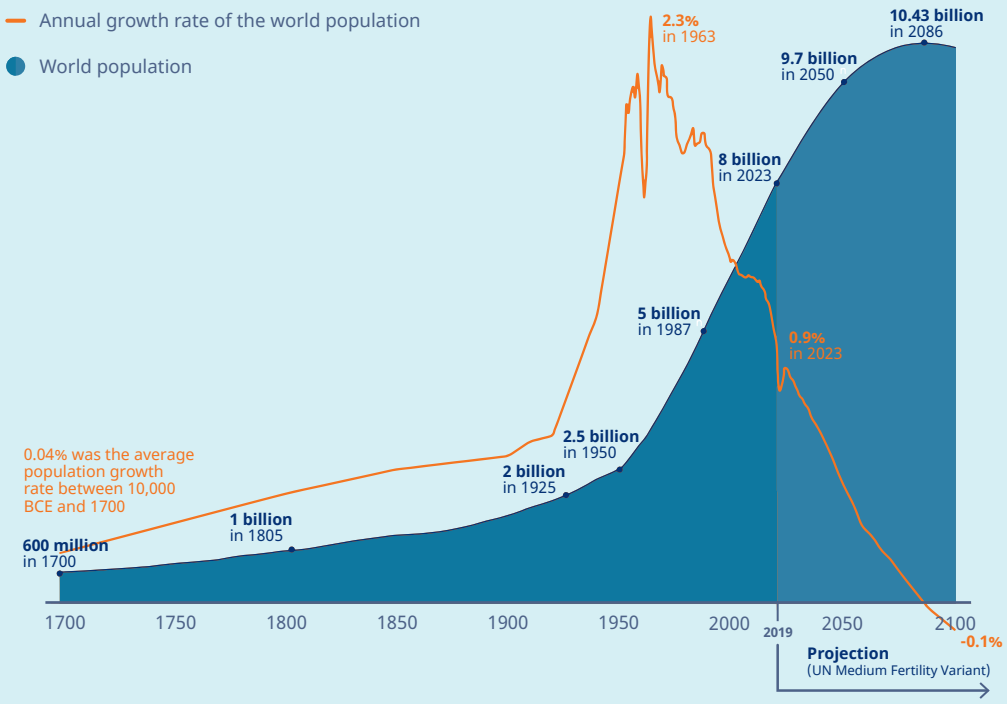
While efforts are being made to encourage foreign direct investment for sustainable projects, the required inflows need to be large enough and happen quickly enough to align with transition timescales. The economic mechanisms and motivations are not fully developed yet, but given transparent and efficient markets, as well as bodies such as the UN driving change, the situation is slowly improving.

GLOBAL DEMOGRAPHIC TRENDS IMPACT CONSUMPTION

The two main demographic changes adding to consumption pressures are the global population's growth and composition. The global population reached 8 billion people in 2022, up from 2.5 billion people in 1950. This increase is unmatched prior to the Industrial Revolution, and is expected to continue to 8.6 billion in 2030, 9.8 billion in 2050, and 11.2 billion in 2100.

The world is also experiencing a demographic transition, with higher life expectancy resulting in an ongoing population increase (see Figure 2).

02| World population on path to reach 11 billion by 2100



Source| Our world in Data base on HYDE, UN, and UN Population Division (2022 Revision)

Between 2000 and 2019, life expectancy increased globally from 66.8 years to 73.4 years. While this is a triumph for humankind, from a sustainability point of view it means that the increased population is consuming resources and producing waste for around 25% longer than was the case 50 years ago. A population that is both living longer and increasing in size has a compounding effect on resource requirements.

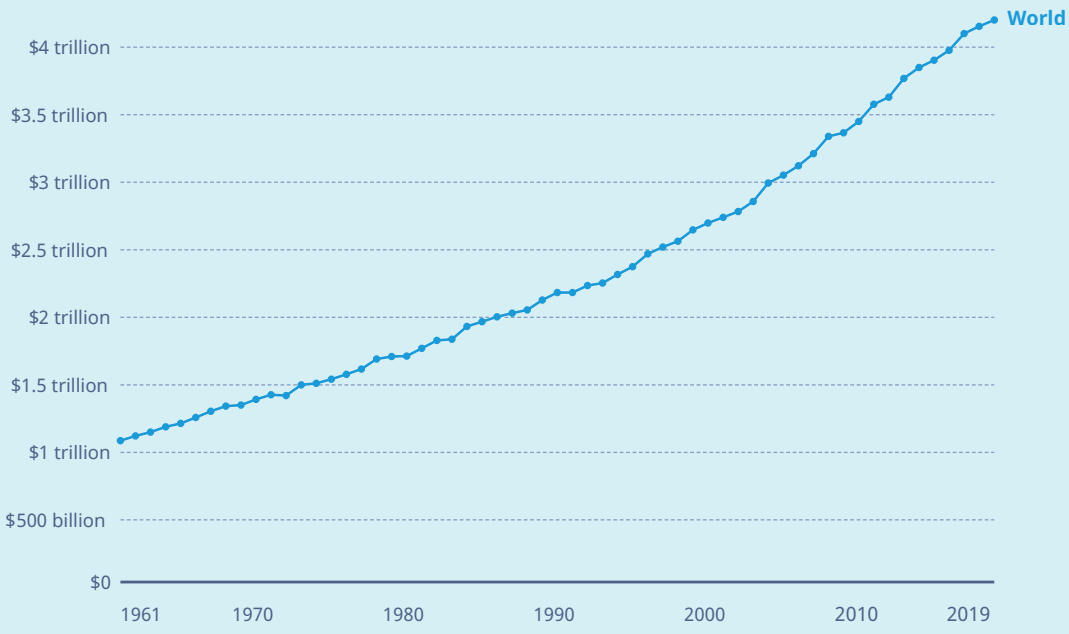
Deep dive: Examining ESG risks through the lens of food and energy consumptions

The World Economic Forum (WEF) cites five key risks for 2023 in its annual *Global Risks Report:* energy supply, cost of living, rising inflation, food supply, and cyber attacks. Two of these — the food and energy supply crises — are exacerbated by rising consumption trends globally, increasing the strain on environmental and social conditions.

FOOD CONSUMPTION

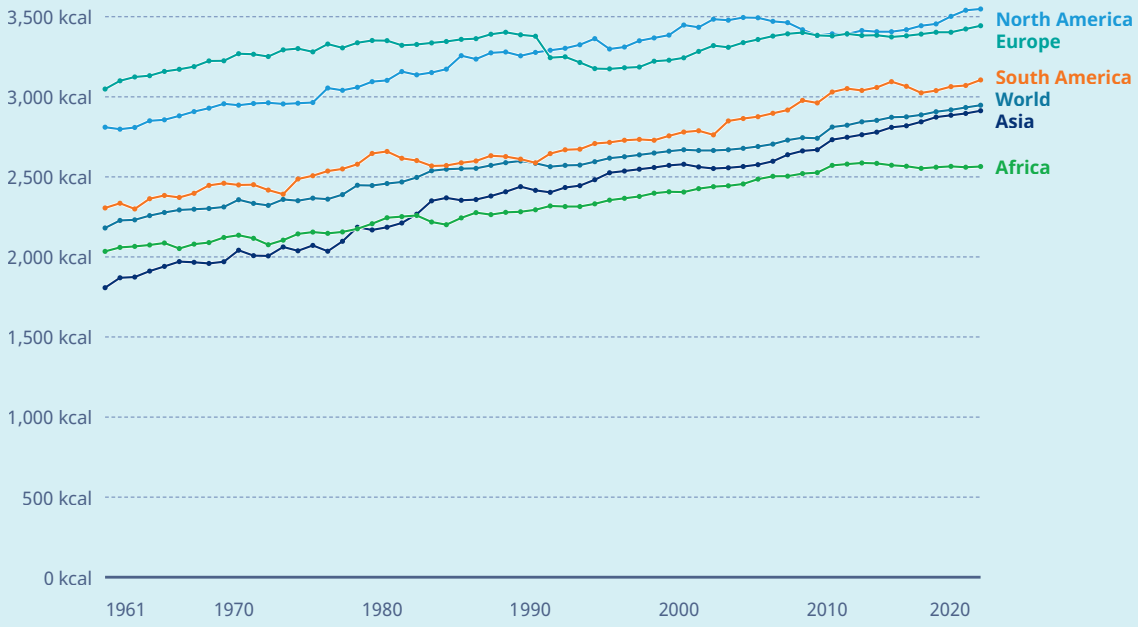
As the number of mouths to feed has increased, agricultural output has risen consistently since the 1960s (see Figure 3). When countries get richer, food intake per person increases, in line with other patterns of consumption (see Figure 4).

03| Agricultural output rising steadily



Source| United States Department for Agriculture (USDA) Economic Research Service

04| Food consumption per capita increases



Source| UN Food and Agriculture Organization (FAO)

By 2050, 9.8 billion people will need to be fed, which will require closing both a food gap and a land gap if it is to be accomplished sustainably. At current consumption and population growth levels, there is a 56% gap between the number of crop calories (albeit this is but one food consumption measure) produced in 2010 and what will be needed in 2050. There is also a land gap — of roughly twice the size of India — between global agricultural land area in 2010 and expected agricultural expansion by 2050.

Closing these gaps, if not done sustainably, will have significant environmental impacts. Current food production techniques already account for 26% of global greenhouse gas emissions and 70% of global freshwater withdrawals; this cannot be sustained in line with consumption and the global ESG agenda; this is recognised in UN Sustainable Development Goal 2, which looks to set better global conditions in this respect.

Additionally, the changing nature of food consumption directly impacts the environment. For example, global demand for meat is expected to increase by 70% by the year 2025; meat production accounts for 54% of all food production emissions.

Since the 1960s, global production of cattle for meat has more than doubled. Much of this increased demand comes as nations develop; meat consumption rises with increases in GDP.

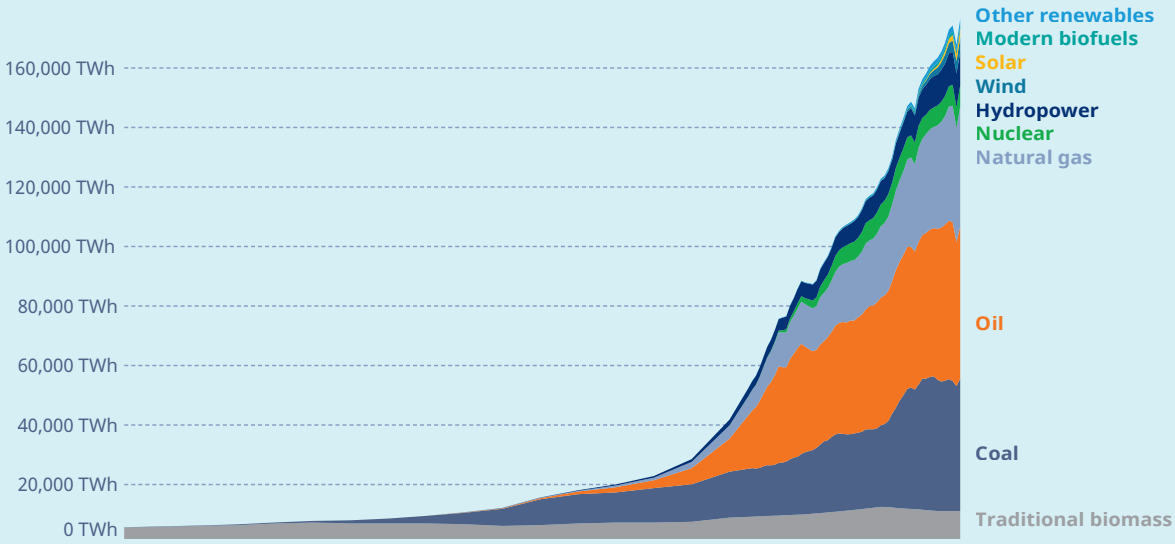
Meat production requires more land, water, and fossil fuel use than plant-based protein sources. At the same time, it accounts for only 20% of the average person's caloric intake, making it the least efficient and least sustainable food source. The increase in meat consumption has a large and disproportionate impact on GHG levels, land availability, and ESG targets.

Accordingly, food supply chains, already under pressure from generally increasing demand, are being further tested in the wake of the COVID-19 pandemic, the conflict in Ukraine, rising inflation, and high commodity prices. These factors have increased food and nutrition insecurity. Long-term risks of a reduced food supply lie in social factors, such as health and productivity, threatening the socio-economic success of nations globally.

ENERGY CONSUMPTION

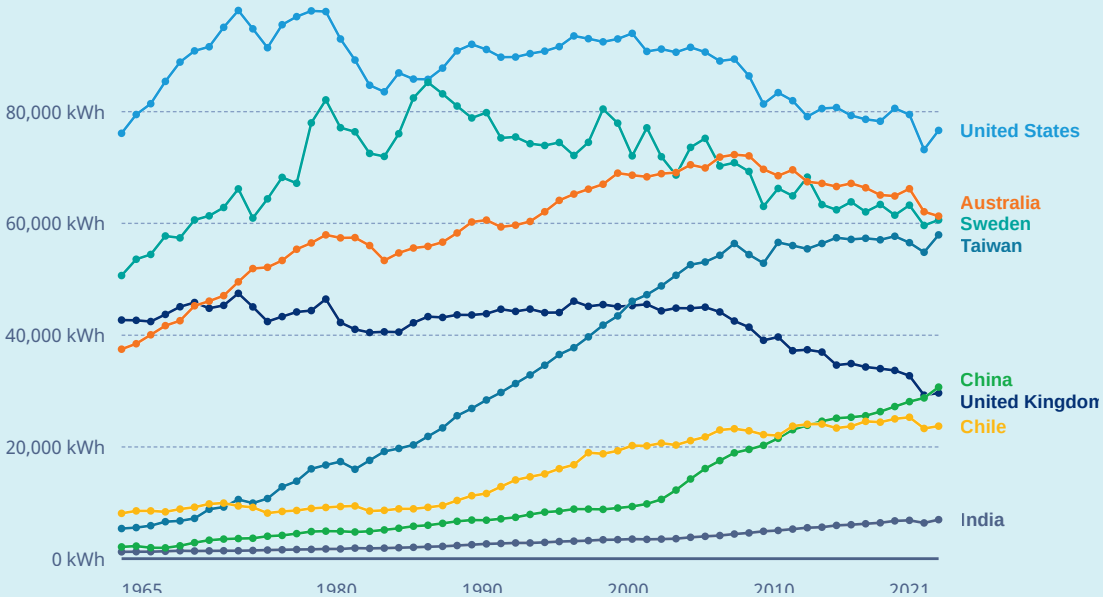
Like food consumption, global energy use is driven by an increasing population and increased economic prosperity in developing countries (see Figures 5 and 6). Energy consumption data shows that demand has increased almost every year since the 1970s, with exceptions in the 1980s and in 2009, following the financial crisis.

05| Energy demand increasing



Source| Our World in Data based on Vaclav Smil (2017) and BP Statistical Review of World Energy

06| Energy use varies by country



Source| Our World in Data based on BP & Shift Data Portal

Demand for energy is growing faster than the supply of sustainable energy sources. Globally, with the exception of Iceland and Tajikistan, economies and economic growth remain dependent on fossil fuels. Oil output is expected to keep rising to 2030, with 85% of the increase in production coming from the United States (see Figure 7).

Growing energy consumption increases the challenge of transitioning away from fossil fuels towards low-carbon sources. New low-carbon energy will need to meet this additional demand if it is to displace fossil fuels as part of the energy transition.

Energy supply risk also impacts plans for decarbonisation as countries prioritise energy security. Pressures in the energy market existed before Russia's invasion of Ukraine, but the conflict has hindered recovery from COVID-19 and triggered an onward energy crisis worldwide. The biggest impact is being felt in Europe, where reliance on Russian natural gas has proven problematic, with widespread implications for energy provision, as well other knock-on effects.

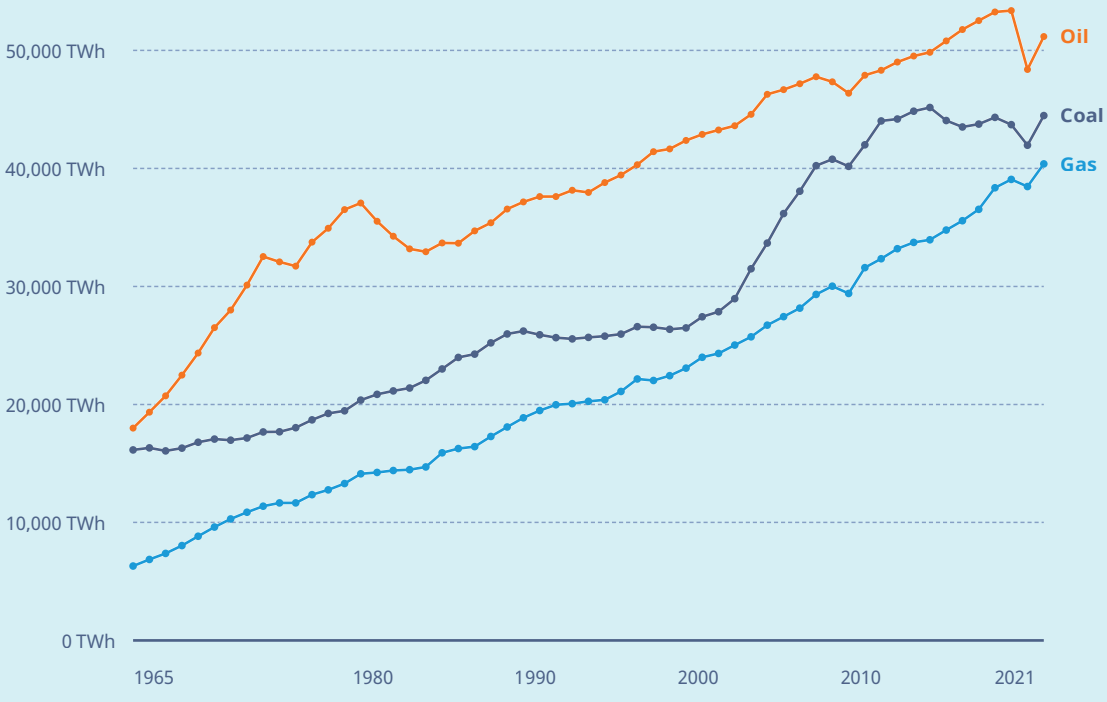
As a result of recent global systemic shocks, such as the pandemic and energy crisis, the price of energy has increased and as such, 75 million people who recently got access to electricity could no longer afford it. Short-term actions to secure domestic fuel supplies have included increasing oil and coal-fired electricity generation. An example can be seen in the UK, where regulators have approved the development of a gas field in the North Sea with the potential to produce 6.5% of Britain's gas output. This U-turn on the mandate to move away from fossil fuels could damage the UK's advance toward net-zero commitments and the global ESG agenda.

While the global energy crisis and increasing energy consumption have increased our reliance on fossil fuels in the short term, they have also created urgency for the clean energy transition to provide energy security. For example, wind, solar, battery energy storage systems, and certain hydrogen use cases have been identified as having the potential to reduce the EU's dependence on natural gas.

Additionally, the energy crisis has driven an uptick in support for nuclear power. French President Emmanuel Macron has committed EU€1 billion to nuclear power by the end of this decade in a move that could help reduce GHG emissions and provide defence against volatile energy prices.

Opinion on tactics is divided across the EU, but the objective to increase domestic security and reduce GHGs is understandable. The debate will continue globally on the energy balance and how traditional generation will need to mix with new methods of generation to meet growing energy demands.

07| World oil consumption remains high



Source| BP Statistical Review of Global Energy

FRAMING CONSUMPTION IN ECONOMICS:

The doughnut model

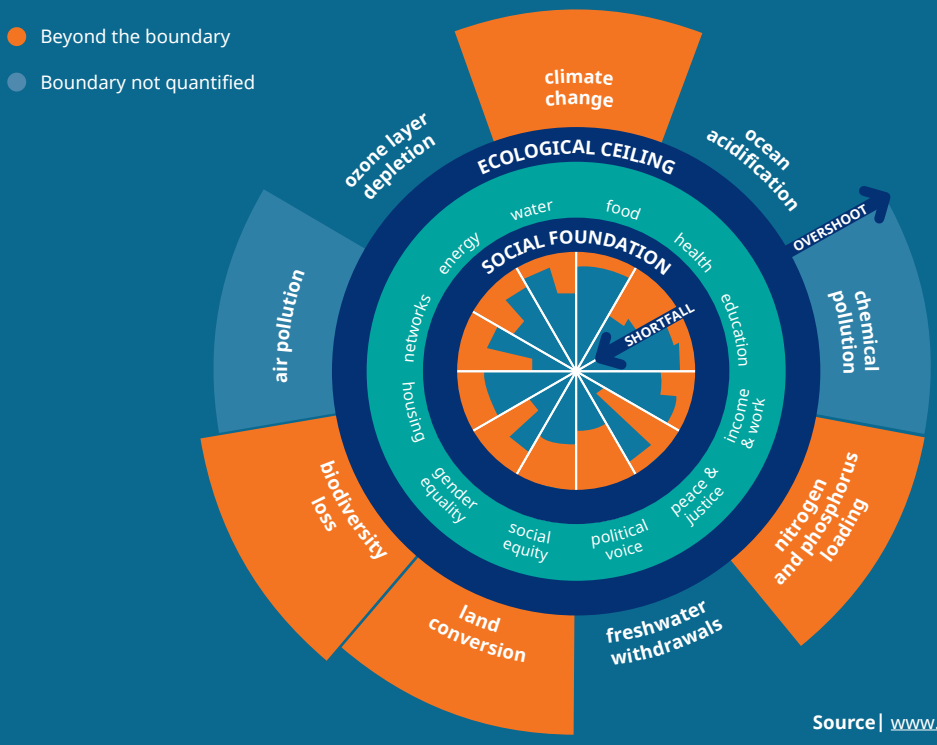
Looking beyond resource consumption, many factors feed into the ESG agenda. The challenge lies in considering all the factors that impact an ecosystem, measuring them, and adjusting for them. Many economists and scientists have modelled how these factors fit together; one overarching approach that considers ESG is The Doughnut Model (see Figure 8).

This economic model, created by Kate Raworth, looks at the closed environment of an ecosystem, and is applicable at the global and country level. The model allows visualisation of how human consumption and resource use can pose an existential threat to ecological and social stability — and hence, the ESG agenda. The model highlights additional consumption factors including education, health, and water; social conventions, including social equity and gender equality; and negative environmental impacts, all of which require monitoring to ensure ecological and social limits are not exceeded.

The doughnut's outer circle depicts nine 'planetary boundaries' that span the globe and support all ecosystems. These boundaries are defined as the limits that human consumption must remain within to maintain a stable environment and avoid significant damage. The doughnut's inner circle contains social factors required for humans to meet their basic needs, and where we fall short in providing these.

What is clear from the doughnut model is that all things need to be balanced to ensure sustainable resource use within the ecological ceiling and the social foundation. The balancing of natural resource usage and human desire is going to become a fundamental topic for the development of business models, society, and the planet in general. The challenge now for the world — and to meet ESG goals — is to operate within the doughnut's green zone.

08| The 'Doughnut Model' helps visualise threats to the ESG agenda



Source| www.kateraworth.com/doughnut/

Business implications of increasing consumption

The examples above, of food and energy consumption, highlight the changing availability and costs of the inputs to a business model. What might historically have been considered an infinitely available resource — such as water or timber, or even a finite resource with significant reserves, such as oil and gas — looks very different today. Consumption pressures are reshaping the realities of what only 20 years ago would not have been a strategic business consideration.

In a world in which supply side constriction is becoming an ever increasing problem, a new mind-set is required for business leaders as they plan strategically for competitive advantage and growth. One can approach this strategic problem using various economic theories or starting points to unpick this conundrum. However, as with any major business model consideration, there are a few fundamental risk pillars that need to be addressed from the outset.

Raising capital

One of the biggest challenges lies in financial returns. Investors and corporations should align their timescales for return-on-investment (ROI) with longer-term issues related to consumption pressures. For players in both the financial and real economy, given the reliance on debt and equity markets and considerations of 'the next quarter's reporting', long-term risks related to consumption trends and planetary boundaries are typically deprioritised in favour of immediate returns.

For the average business, leaders are often required to balance a shorter view of shareholder value creation, which can be out of step with longer term resource use strategy and planning. Given the relatively short C-suite tenure and their incentives to generate continuous growth and returns, the role of the institutional debt or equity holder will play a significant part in the extent to which CEOs and boards will be able to consider longer term risks, such as consumption.

Most who seek an ROI look to a relatively shorter time frame when identifying where to invest. For example, considering the 'archetypal' hedge-funds with a 3- to 6-month investment horizon, 'typical' fund managers with a 6- to 24-month horizon, and pension funds with 3- to 7-year hold horizons (capital deployment in infrastructure being longer, but proportionally smaller). Financial investors, selecting investments with this more immediate timescale in mind, are therefore incentivised to make decisions that do not necessarily encompass a long-term view of strategic resource availability.

Senior management, C-suite executives, and other business leaders face the challenge of balancing long-term risk manifestation and incentivising good behaviour against the realities of short-term profit-taking. This economic conundrum has long been the case. Today, more than ever, it highlights the challenges of short-term versus long-term corporate value creation — governments and regulators have stepped in to address this problem.

Despite the apparent disconnect between long-term problems and short-term motives, regulations — such as the Taskforce on Climate Related Financial Disclosures (TCFD), Taskforce on Nature Related Financial Disclosures (TNFD), and Corporate Sustainability Reporting Directive (CSRD) — are starting to highlight and penalise a lack of transition planning and vision. These new measurements and constrictions are beginning to feed into the value to shareholders, hence reshaping both the tactical conduct and strategic thinking of management.

Historically, there was an economic view known as stakeholder theory, coined by economist Milton Friedman, that suggested you can 'do well or do good'. This view of business and its purpose was long the pre-eminent one driving strategy around shareholder value creation, but has now been challenged. Recent academic studies have found evidence between superior share price correlation, risk measurement and fundamental returns profiles by tracking companies that manage ESG risk better. For example, a report from Oxford University found that, in most cases, 'stock price performance' is positively influenced by good sustainability practices.

This change in thinking has started to alter the view of organisations. Indeed, it seems to be the case that you can do well by doing good, breaking the old adage; with the B-corp wave being a prime example of this movement. As leaders take in this changed view, their approach should be one of pragmatic risk understanding, appropriate change, and strategy alignment to longer term ESG risk metrics, not only more immediate financial motives.

Physical risk

An immediately relevant concern is that of the physical risks facing firms from climate change. As referenced previously, increased consumption and the associated fossil fuels are directly linked to climate change. We are already feeling the impacts of major disaster events in climate and nature; the 10 most expensive storms, floods, and droughts in 2022 each cost at least $US3 billion in a “devastating” year on the frontline of the climate crisis, according to a report by Christian Aid. That is without counting the human cost.

A real-world example of where firms should consider climate risk is in physical asset strategy, where investments in risk protection need to align with the actual risk. At the primary level, the risk exposure of each building is a function of geographic location, architectural design, and current resilience measures, such as flood barriers.

Additionally, physical risk can impact other core operational activities, such as a disruption to infrastructure services. When appraising real estate and geographic locations, even if the firm’s property is resilient, the supporting local infrastructure and utility services may leave the business significantly at risk from a resilience and continuity perspective. The most robust building is no good if the entry road is washed away. This illustrates the imperative to take a holistic view of physical risk exposure, considering both real property and the supporting infrastructure.

Decisions around where to actively buy — or sell — property globally carry both short- and long-term risks. Physical risks not only have an impact on the ‘E’ agenda, they also have implications for the socioeconomic status of employees and surrounding communities. For example, physical climate disasters can affect the ability for employees to live and work in the affected area. Additionally, disruptions to food systems can further impact the ability for an organisation to stay operational.

Organisations should consider the short- and long-term implications of physical risks on the business and its operating model, including how consumption may exacerbate them. Having a strong ESG framework can support mitigation strategies that protect organisations against future risk. Measuring and quantifying physical risk — using robust modelling that accounts for both historical data and potential future scenarios — has become more important to decision-making. The understanding of how to quantify and manage physical risks is a differential factor in how companies are led.

Consumption and supply chains

Economic theory and practical business strategies have dictated over the past half-century that supply chain location strategy should focus on low-cost base countries. Factors of production have played a critical role in shaping the productivity of industrialising nations, making them the most competitive suppliers of many core products or components across many manufacturing value chains.

To date, continued supplier concentration risk in these geographies has not been a significant issue. In fact, it has been the opposite for developed nations, where this formed a critical growth factor in their plans, with cheap input goods. However, as consumption trends have put pressure on these traditional low-cost base providers of goods and services, the continuity risk to global supply chains has moved to front-of-mind. Although it is fair to say there have been many continuity disruptions beyond consumption-led issues such as COVID-19, geopolitical issues, and flooding, consumption is playing an increasing part in this dynamic.

The challenge for any global high-value good or service, which is produced by a supply chain that relies on low-cost providers, regions, or geographies, is to balance margin creation against the associated supply chain risk. This construct has come under pressure from additional factors not associated to the individual providers in the supply chain, but more to regional risk such as geopolitical or climatic.

These systemic risks add a new complexity to the 'today' planning for the procurement function as well as business owners in general. Going forwards, understanding and projecting universal risks that are likely to occur with more frequency, such as severe weather events, will require building resilience into the corporate strategy and mid- to long-term planning cycles. What can also be seen is the interplay with consumption economics, where at level one we consider the individual counterparty suppliers, at level two the aforementioned systemic risks, and now we have to consider a third level — how reliance on finite raw materials or key input products will add additional risk to the supply chain.

We have already started to see these examples manifest, with a global shortage of microchips exacerbated by the increased demand for consumer goods during COVID-19, which was followed by other complicating factors. Supply chain economics dictates that there is an efficient frontier for how much capacity and inventory can be held in any good or service globally. When compounding risk factors such as geopolitics, climate, and consumption come together, we see these inventories exhausted and business models falter.

Forward-looking corporate strategies will look at supply chains with an optic of credit worthiness and price, while layering in systemic risks and the risks associated with upwards consumption trends. This wider consideration of supply chain risk may require lengthening the timescale over which supply-side counterparties are evaluated to build in a longer-term comfort level and confidence on which to base who supplies the organisation.

Furthermore, given the realities of how supply chains may affect the current business model of an organisation, a pragmatic eye should be cast over the current and anticipated operating and business model to assess whether the current value proposition will be impacted by projected supply chain pressures. Given the increasing complexity of supply chain risks, this aspect of risk modelling and consideration will start to play a far more dominant factor in global corporate planning than ever before. The ability for business owners and leaders to assimilate, adapt, and find opportunity in this new world order will have a significant impact on their competitive advantage and ultimately long-term shareholder value creation and retention.

Biodiversity loss affects businesses

Nature-related issues represent the next wave of resource and sustainability concern — many see it as a greater risk than climate change. For example, increasing food consumption and the resulting land-use change may lead to the loss of biodiversity and potentially of wider ecosystems.

The impact of nature and biodiversity loss is not fully understood, but for many businesses the impact will be severe if the associated and dependent ecosystems collapse. Nature-related risk is becoming as much a part of the ESG discussion as climate risk. Research from WEF shows that $US44 trillion of economic value generation – over half the world's GDP – is moderately or highly dependent on nature and its services. Nature loss matters for most businesses, through impacts on operations, supply chains, and markets. For example, 60% of coffee varieties are in danger of extinction due to climate change, disease, and deforestation.

Although the impact could be greater, nature and biodiversity risk remain behind climate in the global agenda, because of the unknown global impacts. Looking forward, new reporting frameworks on nature, such as TNFD, suggest an imminent focus on this topic. Firms can start to consider, from a risk and opportunity perspective, both the financial and non-financial impact of biodiversity loss on their supply chains —-beyond immediate tier one suppliers.

While initially a difficult exercise, attention to these risks can build resilience into the overall corporate supply chain strategy. In doing this, firms can understand how to reduce their impact on nature, define their nature-related strategy, and respond to future unforeseen impacts to become stewards of nature. This has a dual impact on business models; providing resilience through a differentiating risk management tool, as well as identifying commercial opportunities as businesses adapt to growing societal pressures to be nature positive.

All of these considerations should be put into a sustainable framework that goes beyond traditional short-term profitability. To create and protect long-term shareholder value, business strategies should build ESG resilience into the full gamut of risk factor condsiderations and value creation strategies. Horizon-scanning for new ESG risks will be key to the successful business leader of the future – biodiversity is seen by many to be one such theme.

Conclusion

As the global population expands and nations drive towards economic prosperity, human consumption will inevitably grow. However, this will eventually need to be confined within pragmatic boundaries as it cannot continue unabated. The detrimental impacts associated with this upwards trend will manifest in ESG factors, albeit with the most notable pressure on the environment.

For the business, the balancing of short- and long-term value creation against short- and long-term risks should be rationalised. Risk managers, C-suite executives, and other stakeholders should look at how ESG risks are managed and blended into traditional risk management frameworks.

While the focus on climate will continue, the wider ESG metrics are likely to have similar implications to business models in the long run. Integrating ESG metrics, science-based targets, regulations, and corporate positioning aspirations into a future-state target operating and business model will be fundamental. The associated risk factors can then be captured, modelled and mitigated in enterprise risk management (ERM) systems for enduring value creation and protection.

Adding areas of ESG risk beyond climate to corporate planning will support roadmaps for navigating what is undoubtedly going to be a period of significant systemic risk. Embracing the challenge now, and grasping the nettle of ESG, will build in resilience, such that when these risks accelerate, the business risk functions and leadership will have thought-through options to mitigate them — ensuring survival and upside prosperity.

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Charles Sincock leads Marsh's Advisory ESG & Strategy capability. Charles assesses market trends, shapes the Marsh Advisory team response and propositions, and works with clients' senior leadership to shape their ESG and strategic direction. Prior to Marsh, Charles has worked in consulting, private equity and mergers and acquisitions with a focus on renewables and green infrastructure.

This paper was co-authored with Jemima Haywood and Anushka Duggal.

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