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GOVERNANCE AND SUSTAINABILITY

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In search of sustainability

It is now abundantly clear that corporate governance and sustainability are inextricably linked.

The goal of a sustainable enterprise that exists integrally with the natural environment is both possible and necessary: business strategies can be redirected to serve the natural environment rather than to destroy it. This realisation is dawning almost everywhere – in governments and in boardrooms. Translating policy into action, principles into practice, good intentions into firm reality has proved more difficult.

Though the corporate social and environmental responsibility (CSR) movement has moved over the decades from the margins to the mainstream of business reporting, it is hard not to escape the conclusion that this is more symbolic than substantive CSR – that is, it is not fundamentally changing business models, it is often largely changing rhetoric (Bannerjee, 2012; Crane et al., 2014). As Bowen (2014: 13) explains:

Symbolic corporate environmentalism consists of shared meanings and representations around changes made by managers that they describe as primarily for environmental reasons. However, some of these symbols are completely disconnected from the impacts that firms have on the natural environment, and many more have less substantive environmental impact than they symbolically promise. Despite apparently widespread corporate environmentalism, industrial activities are pushing society closer to and, in some cases, exceeding planetary boundaries. The gap between firm's symbolic activities and the reality of environmental damage endangers our natural surroundings and, ultimately, may threaten the stability of current economic and social systems.

Corporations do realise they must be seen to be socially and environmentally responsible, and, in many cases, the boards and directors of these companies wish to be as responsible as possible. However, the transformation of business models, strategies and practices is often conceived as an ideal, but found to be too challenging or too premature without a fundamental shift in the market. That is, as Vogel (2005) identified, CSR has often been interpreted by corporations within the logic of existing market constraints, and there is rarely the confidence or even the perception by corporations themselves that it is possible to change markets and transform technologies. The slow pace of change of major industries such as energy, automobiles, construction or aerospace is illustrative of this failure of imagination or nerve, and a failure to realise fully the damage being caused, and how we are running out of time. (That is until the market suddenly shifts, and there is a rush to catch up, as in the rapid switch to electric fleets in the international auto industry when the Tesla market capitalisation quickly exceeded all the other US automakers' market capitalisation combined (Clarke, 2020).)

Though there is now a widespread corporate acceptance of the concepts of corporate social and environmental responsibility, CSR continues to invite a degree of scepticism, most seriously for engaging in amoral apologetics for unacceptable corporate behaviour, and the apparent capacity of corporations, particularly in the resources sector, to express CSR ideals while engaging relentlessly in every opportunity to make money regardless of

the environmental or social consequences (Wright & Nyberg, 2015). CSR has matured over recent decades, driven by evolving global guidelines, national regulation, increased stakeholder expectations and more demanding corporate disclosure requirements, together with widespread voluntary initiatives by corporations to embed CSR into their core business. Yet what is presently happening lacks the speed and scale to bring about the systemic change required to remedy increasing social and environmental challenges. While hope for greater corporate responsibility is encouraged, the damaging legacies of decades of neglect continue to be unearthed. Jane Nelson (2014) argues:

...The negative headlines persist, fuelled by reports of sweat-shops in low-income countries producing cheap goods for OECD markets, fatal tragedies such as the collapse of the Rana Plaza garment factory in Bangladesh in 2013 and the Turkish mining disaster in 2014, and catastrophic environmental accidents. Moreover, the legacy of the Global Financial Crisis, concerns about corporate tax practices and challenges such as youth unemployment and climate change have forced corporations to lift their sights further above the bottom line and to judge their performance against wider social goals. Economic growth must now be more inclusive and more sustainable. The onus is on firms to produce more jobs, products, services and infrastructure for more people, while putting more emphasis on decent work and fairness, and less strain on natural resources.

The most important, and the most difficult, conceptual hurdle corporations have to get over in the search for sustainability is the realisation that the natural world is not a free resource for them to willfully exploit for profit, it is in fact the most precious resource we possess. At all costs it must be protected and maintained for future generations, but also for the stability and health of present economies and communities. *Planetary health* is the vital infrastructure of our very existence (The Rockefeller Foundation–*Lancet* Commission on planetary health, 2015).

The irresponsible depletion of natural capital

The reckless and irresponsible depletion of the natural capital of the world over two centuries of industrialisation is the greatest tragedy imaginable. The depreciation of natural capital and nature's subsidy should be accounted for so that economy and nature are not falsely separated. Policies should balance social progress, environmental sustainability and the economy. The World Business Council for Sustainable Development (WBCSD, 2020) has stressed the need for global goals to create an 'equitable, carbon-neutral, nature-positive world'. Presently, in the words of UN Secretary General Antonio Guterres 'Humanity is waging a war on nature...' This war against nature must end. 'Making peace with nature is the defining task of the 21st century. It must be the top, top priority of everyone, everywhere' (Guterres, 2020).

The dangerous and worsening decline of biodiversity is extensively documented. This has serious consequences for the health of the planet, its human inhabitants and for the rest of

life on earth. The Global Goal for Nature (Locke et al., 2021) identifies the level of ambition needed to achieve a nature-positive world with three measurable temporal objectives:

- i. Zero Net Loss of Nature from 2020;
- ii. Net Positive by 2030; and
- iii. Full Recovery by 2050.

The baseline of 2020 serves as a reference for zero net nature loss to ensure that we focus on retention of large intact areas as well as all remaining natural ecosystem fragments. The year 2030 is a milestone for improvement in the abundance, diversity and resilience of species and of ecosystems. Meeting this 2030 objective will require immediate restoration beginning in 2020 (the first year of the UN Decade of Restoration) as well as retention of existing natural ecosystems whether they be highly intact or remnant fragments. The 2050 objective requires continued retention and restoration until there are sufficient functioning ecosystems to safeguard the stability and resilience of the Earth system, and support all life on Earth, including future generations of peoples. (Locke et al., 2021: 3)

This theme of the precariousness of the natural capital of the world and the urgency of taking action was presaged by Prince Charles at the Accounting for Sustainability Forum, at St. James's Palace, London, December 2013:

In stark financial terms, all the evidence demonstrates a simple fact: we are failing to run the global bank that we call our planet in a competent manner. We no longer just take a dividend each year; instead, for some time, we have been digging deep into our capital reserves. And, after the near collapse of our entire financial system, we all know that such excessive risk-taking can cause immense havoc. The ultimate bank on which we all depend – the bank of natural capital – is in the red; the debt is getting ever bigger and that is reducing Nature's resilience and considerably impeding her ability to re-stock. It leaves us dangerously exposed. (CIMA, 2014: 1)

In a remarkable report, *Accounting for Natural Capital: The Elephant in the Boardroom* (CIMA, 2014), published by the Chartered Institute of Management Accountants, the accounting profession is challenged to realise that the risks and liabilities of neglecting and running down natural capital is dangerous in a far more profound way than the risks associated with poor control of financial capital:

CIMA states that natural capital and our dependence on it are largely invisible in corporate accounts and decision making. CIMA poses the question 'How can something so fundamental be absent from our thinking?' And CIMA suggests a number of systemic reasons for this:

1. Our entire economic and financial system is based on flawed assumptions of infinite resources and perpetual equilibrium in the natural ecosystem.
2. Our thinking and behaviour are overly dominated by purely financial measures of progress and 'success' such as gross domestic product (GDP), revenues, profit, cash flows and earnings per share.

3. The structures of modern accountancy are derived historically from societies and economies which assumed that nature's abundance would last indefinitely.
4. Our business models and practices do not reflect how business is an integral part of a wider, complex system.
5. The focus of the vast majority of businesses is woefully short-term – typically directed at quarterly performance reports, short-term financial performance and annual returns.
6. Perhaps, most importantly, we lack the frameworks and systems needed to account for the relationship between natural capital and business strategy and performance. (CIMA, 2014: 5)

The neglect of careful management accounting of a business can lead to bankruptcy, but the neglect of any responsible accounting for the impact of industry on nature can lead to much greater catastrophe. When these catastrophes occur, the causes identified are often the most immediate, and there is little or no investigation of the underlying causes of natural disasters in climate change, global warming, and other environmental damage. When the COVID-19 crisis broke in early 2020, with devastating consequences, there was little discussion of how global environmental change had induced the global pandemic.

The COVID-19 crisis

The intense debate on climate change, global warming, and the need for urgent emissions reductions was suddenly interrupted in early 2020 by the onset of the global pandemic of COVID-19 which shook the foundations of the neo-liberal world order. The impact of the pandemic on world GDP growth was massive. The COVID-19 global recession was the deepest since the end of the Second World War, with the global economy contracting by 3.5% in 2020 according to the IMF *World Economic Outlook*, instead of the anticipated 3.4% growth for that year. Almost every country in the world posted deficits, but the poorest countries were the most badly impacted (IMF, 2020; Yeyati & Filippini, 2021).

The pandemic was unexpected, and unprepared for by governments around the world. In a March 2015 TED talk (Gates, 2015a), Bill Gates, the founder of Microsoft, was reflecting on the lessons of the global outbreak of Ebola. He suggested governments needed to prepare for future pandemics and invest in public health as fully as they were prepared to invest in the defence industries and military. The greatest threat to stability in the world in the future was more likely to be pandemics than warfare he predicted in the *New England Journal of Medicine* (2015b; 2021; 2022):

It's useful to compare our preparations for epidemics with our preparations for war. Defense budgets and investment in new weapons dwarf investments in epidemic preparation.... Because there was so little preparation, the world lost a lot of time trying to answer fairly basic questions about how to deal with Ebola. In the next epidemic, these delays could cause a global disaster. The problem does not lie solely with any single institution – it is a global failure. The world needs a global warning and response system for outbreaks. (WHO has a group with a similar name – the

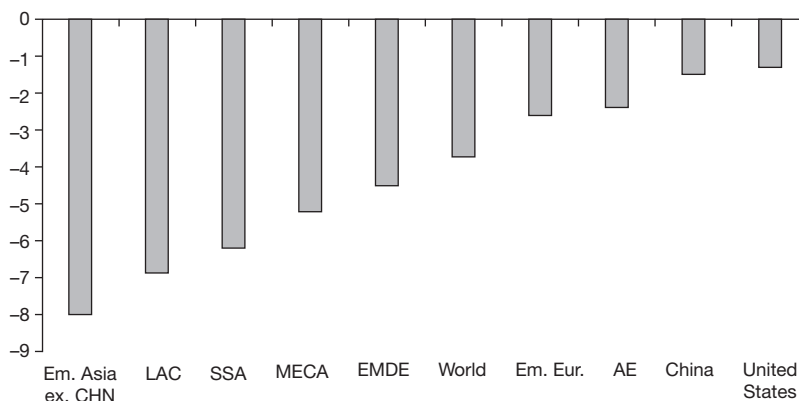


Figure 7.1 Global GDP Growth 2020

Source: Adapted from IMF *World Economic Outlook*, April 2021 (Em. Asia = Emerging and Developing Asia excluding China; LAC = Latin America and the Caribbean; SSA = Sub-Saharan Africa; MECA = Middle East and Central Asia; EMDE = Emerging Markets and Developing Economies; Em.Eur. = Emerging and Developing Europe; AE = Advanced Economies)

Global Outbreak Alert & Response Network – but it is severely understaffed and underfunded)... The key point is that the world is not nearly as prepared for a massive epidemic as it needs to be...There is a critical need to reinforce basic public health systems. These are fundamental systems that include primary health care facilities, laboratories, surveillance, critical care facilities... (2015b: 2,3)

Gates' pragmatism was neglected by governments until it was too late:

The world is responding to an unprecedented health, social, and economic emergency. By 2021 over three million lives have been lost due to the coronavirus pandemic (WHO 2021). Societies have been severely disrupted – both from the health impacts and the pandemic-induced recession. The International Monetary Fund (IMF) estimates that global output declined about three times as much as in the 2007–08 Global Financial Crisis, in half the time (IMF 2020). The World Bank (2020) estimates that Covid-19 could push up to 100 million people into extreme poverty. (CSIS and CIF, 2021)

The preparations for the 2020 Glasgow COP26 round of UNFCCC meetings were abandoned as the whole world was impacted by the COVID-19 pandemic (and the Glasgow UN meeting was postponed until 2021). This was the worst global pandemic since the Spanish Flu had wreaked havoc across the world following the First World War in 1918. In the haste to equip the world with effective vaccines in the face of a rising international death toll, and with hospitals in many countries becoming overwhelmed with COVID-19 patients, this disaster was treated almost wholly as a medical emergency. In fact, the complex causes of this pandemic were similar to the causes of climate change. The combination of mass industrialisation, mass urbanisation, and mass transport (by land, sea and air), together with the wider impacts of

global warming over the last century, created a conducive environment for the origination and mutation of viruses and their almost immediate transmission around the world. Once, viruses might be contained within relatively isolated communities, now they could travel the world first class on a daily basis.

The path-breaking *Safeguarding human health in the Anthropocene epoch: report of The Rockefeller Foundation–Lancet Commission on planetary health* (2015) presciently had summed up in graphic terms the awful dilemma for human health unleashed by the unrestrained exploitation of the environment:

By almost any measure, human health is better now than at any time in history. Life expectancy has soared from 47 years in 1950–1955, to 69 years in 2005–2010, and death rates in children younger than 5 years of age have decreased substantially, from 214 per thousand live births in 1950–1955, to 59 in 2005–2010. But these gains in human health have come at a high price: the degradation of nature's ecological systems on a scale never seen in human history. A growing body of evidence shows that the health of humanity is intrinsically linked to the health of the environment, but by its actions humanity now threatens to destabilise the Earth's key life-support systems. (*The Lancet*, 16 July 2015)

An authoritative report by the American Public Health Association on *Climate Change, Health and Equity* (2018), published two years before the COVID-19 pandemic, clearly articulated all of the dangers inherent in climate change for the future health of the world's population. The increasingly unhealthy conditions created by climate change suggest that rather than being once in a lifetime events, pandemics may become a much more familiar occurrence. For example, the increasing temperatures experienced and the frequency and intensity of hot summers induces widespread heat stroke and dehydration, which significantly aggravates both cardiovascular and respiratory illnesses. An increased incidence of floods and wildfires can lead to infrastructure damage and water contamination, which in turn can cause injury and water-borne disease. Increased pollution due to Green House Gas emissions causes an increase in allergens, and increased experience of allergy-related illnesses. Finally, and perhaps most threateningly, the increased duration of the warm season causes significant changes in the vector behaviour of mosquitoes and other disease-carrying insects resulting in the increasing spread of severe virus-borne diseases such as Lyme disease, malaria, Zika virus, and West Nile Virus (American Public Health Association (APHA), 2018).

While everyone on the planet will experience the impact of climate change in some way, it is the poorer communities of the world who will particularly suffer:

Globally the human health impacts of climate change will continue differentially to challenge the world's poorest nations, where populations endemically suffer myriad health burdens associated with extreme poverty that are being further exacerbated by the changing climate. In 2009, a British Medical Journal editorial argued that a global commitment was necessary to reduce carbon dioxide emissions and prevent further impacts on health (Jay & Marmot 2009). The climate crisis is a threat multiplier, particularly for communities suffering from environmental injustice. These threats include exposure to air pollutants (such as particulate matter and soot produced from burning fossil fuels) or soil and water contamination (caused by

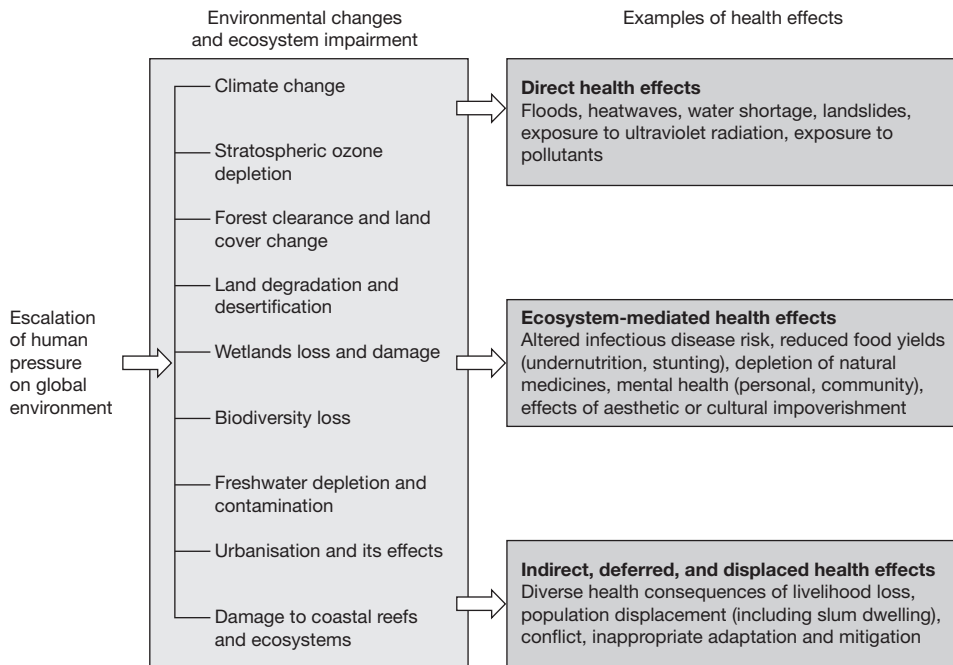


Figure 7.2 Impact of Ecosystem Changes on Human Health

Source: Adapted from *Millennium Ecosystem Assessment* (2005)

dumping coal ash or lead in the water supply). There may be considerable value in introducing a public health frame into the ongoing public – and policy – dialogue about climate change. Rapid and potentially irreversible climate change poses a direct threat to global public health. (Goldhill & Fitzgibbon, 2021)

The immediate policy response of governments around the world to the ravages of the COVID-19 pandemic was necessary and impressive: as if the lessons of Keynes had not been forgotten, there was in the advanced economies which could afford it a vast investment in shoring up the economy to prevent the collapse of jobs and livelihoods, and a big drive to reinforce the public health infrastructure:

Since the onset of the COVID-19 pandemic, G-20 economies have announced fiscal packages already exceeding \$10 trillion, which in real terms is about three times the support provided during the 2008 financial crisis and 30 times the size of the Marshall Plan, which helped rebuild Europe after the Second World War. (MGI, 2020: 2)

Whether or not this did amount to a redrawing of the social contract reversing two decades of neglect is open to debate, but governments worldwide had suddenly woken up it appeared to the importance of sustaining their economies, communities and people, and investing in the public health institutions necessary to do this.

What also the pandemic had cruelly exposed was the extreme inequality within the advanced industrial countries, and the even worse inequality between the developed economies and the emerging economies of the world. In the advanced economies there was a severe discrepancy between the healthy living conditions and the access to medical care of those living in the affluent suburbs compared to the poor working-class, aged and minority populations. More painfully, it was becoming clear that future generations had been irresponsibly endangered, as The Rockefeller Foundation–Lancet Commission on Planetary Health (2015) stated:

As a Commission, we conclude that the continuing degradation of natural systems threatens to reverse the health gains seen over the last century. We have been mortgaging the health of future generations to realize economic and development gains in the present. (*The Lancet*, 16 July 2015)

Meanwhile, the less developed economies were left for long periods without the means to protect the health of their communities. As the developed economies raced towards double vaccinations, the World Health Organization begged for vaccines to be made available to the poorer nations, insisting that the virus did not respect any borders, and that if half the population of the world remains unvaccinated then everyone in the world remains in danger of infection. COVID-19 fully revealed the wider inequalities that are implicit in climate change:

The smallest and least developed countries often bear the most harmful burden of climate change, although they have contributed the least to the problem. Industrialized nations are responsible for the majority of climate pollution. From 1850 to 2011, the United States, European Union, China, Russian Federation, and Japan emitted two-thirds of the global CO₂ emissions, and the United States was responsible for 27% of global greenhouse gas emissions (GHGE)... The World Health Organization estimates that 99% of the disease burden from climate change occurs in developing countries, 88% of which occurs in children under five. From January 1980 through July 2013 there were 2.52 million deaths globally due to climate related disasters, 51% of which occurred in the 49 least developed countries. (APHA, 2018: 7)

COVID-19 not only had a devastating impact on national economies, it attacked the lives and the living standards of the most vulnerable in all societies – the young, the old, the poor, and those with pre-existing medical conditions and ill-health. A whole generation lost precious years of face-to-face schooling, which they might take years to recover from (Gill & Saavedra, 2022).

The Just Green Transition Initiative (JGTI, 2021: 3) calls for a just green recovery from the COVID-19 pandemic to structurally transform economies and accelerate the green transition:

There is renewed openness to large-scale public investment as governments seek to rebuild their economies and boost long-term growth potential. At the same time, the Covid-19 crisis has revealed the depth of inequality within and among countries, suggesting the need for policies that can create new sources of growth while also advancing equity and justice.

The Just Green Transition Initiative makes comparison with the recovery effort from the Global Financial Crisis, which in the United States, and elsewhere, was at least partly portrayed as an investment in green alternatives but in fact largely achieved the opposite neither tackling inequality or accelerating decarbonisation:

Around 16 percent of global stimulus measures following the 2007–08 financial crisis supported green initiatives. While there was a 1.4 percent decrease in global emissions that was observed in 2009 as a result of the economic downturn, the global stimulus contributed to a 5.1 percent rebound in global emissions in 2010 – more than offsetting the original decrease. Then-record levels of public spending also failed to avert or remedy persistent structural inequalities. (JGTI, 2021:4; IMF, 2021)

Similar events could be unfolding within the recovery efforts following COVID-19. The IMF records that by March 2021 governments around the world introduced fiscal measures and liquidity support amounting to more than \$16 trillion. Mainly, these were emergency measures and an effort to stabilise the economy, as opposed to longer term spending for an environmentally safer future (JGTI, 2021: 3; IMF, 2021). In the US, major programmes were introduced under the campaign to Build Back Better, and this call was taken up by other governments in the UK, Europe and beyond (UK Government, 2020; World Bank, 2021).

There is so much to be done if we are to learn and recover from COVID-19 and build a more sustainable and resilient economy and society. For example, transitioning towards sustainable investing; using the UN Sustainable Development Goals to navigate global risks; building social and environmental enterprise (RSM Discovery, 2022). But doubts were raised about the extent to which building back better was actually being achieved in terms of a green and inclusive economy that delivers accelerated decarbonisation alongside greater justice and social equity (O’Callaghan & Murdock, 2021).

The goal of planetary health could prove as elusive as ever: ‘Our definition of planetary health is the achievement of the highest attainable standard of health, wellbeing, and equity worldwide through judicious attention to the human systems – political, economic, and social – that shape the future of humanity and the Earth’s natural systems that define the safe environmental limits within which humanity can flourish. Put simply, planetary health is the health of human civilisation and the state of the natural systems on which it depends’ (Horton et al., 2014).

Big pharma and COVID-19

Turning to the corporate response to COVID-19, as with governments, the pandemic stretched pharmaceutical companies to their limits. In one superficial reading of the pharmaceutical companies’ response, they immediately turned their prodigious research, production and distribution capabilities to this globally threatening virus and within months rather than the usual years, developed safe vaccines that could be rapidly administered to large swathes of the population (at least in the advanced industrial countries that could afford them). As the

developed world moved quickly towards double vaccination for the great majority of their populations in 2021, it might have seemed a great victory for the scientific capability and responsiveness of the large pharmaceutical companies to control a global pandemic.

However, the back-story to this apparently heroic corporate intervention is alarming. Before the COVID-19 pandemic, the pharmaceutical companies were losing interest in the vaccine business because vaccines were less profitable as they are only administered once or twice, compared to the medicines people take on a daily basis. This left mainly the largest companies in the vaccine business including Merck, Sanofi, Pfizer and Johnson & Johnson. With the sudden pandemic, they demanded and secured vast amounts of government funding to develop the required vaccines. For example, initially the US Congress agreed to pay \$10 billion to the companies to research and test the vaccines. But with the establishment of Operation Warp Speed (OWS) – the US government's COVID-19 relief programme (largely staffed by pharma company insiders) – a huge \$22 billion was delivered to the Big Pharma companies. This included \$2.5 billion to Moderna, \$1.2 billion to Astra-Zeneca, \$500 million to Johnson and Johnson, and \$1.6 billion to Novamax (Burleigh, 2021).

Once the vaccines were ready for use, the big pharmaceutical companies could rely on billion-dollar orders from governments desperate to vaccinate their entire populations as quickly as possible; Pfizer alone received nearly \$2 billion from the US government for a contract for 100 million doses of its vaccine. As money rained down on the Big Pharma companies from governments, as soon as they proved the efficacy of their vaccines the share prices of the companies inflated by as much as 15%, and Big Pharma executives were left to claim millions from their stock options. Meanwhile, the scientific researchers who developed the vaccines were on salaries and did not profit in the same way from their prodigious efforts.

While Johnson & Johnson and Astra-Zeneca agreed to sell their vaccines on a non-profit basis, Pfizer expected to earn \$26 billion from the sale of its COVID-19 vaccine, and its profits in the first quarter of 2021 at the height of the pandemic were 44% up on the previous year. Moderna expected to make \$18 billion. Meanwhile, half the population of the world could not afford the Western-made vaccines (unless they were given the reserve (and sometimes nearly out of date) surplus vaccines of richer countries). It was the case that vaccines from Russia, China and India were less assured with lower efficacy results, but at least they were available. The Serum Institute of India was scheduled to manufacture one billion doses of vaccine for poorer countries (Burleigh, 2021).

Restoring nature: replenishing natural capital

If the world is to become a healthier place to live this will involve a global effort to restore nature, replenishing natural capital. Dieter Helm examines the delicate nuances of natural capital, upon which the future of mankind rests:

Natural capital is itself one of many different types of asset. Capital is an input into production, which in turn produces a flow of goods and services for the ultimate flow of humans. What makes it *natural* is that it is not itself produced by humankind – nature gives it to us for free. In some cases, like North Sea oil and

gas, there is a fixed amount and it is a question of who consumes it, when, and with what consequences. This sort of natural capital is *non-renewable*. In other, and in many ways more interesting, cases nature keeps on providing the asset for free, provided it is treated with respect and not over-exploited. It is *renewable*, with potentially infinite yield at zero cost, and hence is extraordinarily valuable. (Helm, 2015: 2)

In estimating the world's largest natural capital risks which business, investors and governments face, Trucost suggests these risks are costing the global economy in the order of \$4.7 trillion dollars per year. Resource-intensive industries and supply chains around the planet are incurring these natural capital costs, and internalisation of the costs by companies and industries has only occurred at the margins. However, confronted by the prospect of another 3 billion middle-class consumers by 2030, demand for natural resources will grow rapidly as supply continues to shrink. 'The consequences in the form of health impacts and water scarcity will create tipping points for action by governments and societies. The cost to companies and investors will be significant' (Trucost/TEEB, 2013: 3). Trucost is engaged in informing companies and investors of the significance of natural capital in the interests of the conservation of the natural commons and intra-generational equity (Bansal & Hoffman, 2013; Sukhdev, Wittmer & Miller, 2014: 3).

A Natural Capital Coalition formed to provide a global platform of business, accounting, consultancy, academia and government members working on natural capital with a common vision (Natural Capital Coalition, 2015a). The purpose was to build the business case for integrating natural capital into decision-making; developing and testing natural capital protocols and sectoral guidelines; shifting corporate behaviour towards enhancing, rather than depleting, natural capital; and supporting the evolution of an enabling policy environment and access to reliable data (Natural Capital Coalition, 2015b). This has led to the formation of a Capitals Coalition in 2020 of more than 400 organisations including business, finance, government, science, accounting standards and multi-stakeholder groups 'to identify and measure the value of their dependencies and impacts on natural, social, human and produced capital' (Capitals Coalition, 2020; 2021).

As Table 7.1 indicates, in the last three hundred years of industrialism we have traversed through different environmental paradigms. When Adam Smith was writing *The Wealth of Nations* in 1776, industrialism was being founded on entrepreneurial principles which celebrated the capacity of mankind to conquer the natural world, and fashion nature's resources to human will. Digging mines, levelling forests, laying land waste, and exploiting raw materials in factories to fashion products for sale was regarded as the demonstration of the might of capital and the ingenuity of industrialists, with little thought of the resulting plight of the natural environment except from poets and the dispossessed. Such laissez-faire beliefs prevailed as industrialisation advanced through Europe and across North America. It was only in the New Deal in the United States in the 1930s that fundamental questions about the destructive capacity of free markets began to be posed. The experience of the long Depression and the destruction of the Second World War inspired the Keynesian interventions that projected the industrial world towards a more responsible direction.

The emerging affluence of the 1960s allowed a redefinition of what the economy might provide and a good society enjoy. Part of this movement was to make industry less polluting

Table 7.1 Eras of Industrialism and Environmental Paradigms

18 th & 19 th C		Late 20 th /Early 21 st C		21 st C
EXTRACT	⇒	SUSTAIN	⇒	REGENERATE
Mine		Process		Reconceive
Exploit		Reduce		Renew
Degrade		Reuse		Replenish
Deforest		Recycle		Reinvigorate
↓		↓		↓
Pollution		Cleaning Up		Sustainable Technologies
Waste		Environmental Protection		Regeneration of Nature

with environmental protection laws, and the civic effort to clean up the grime left by industrial excess. It was only in the later decades of the twentieth century that the concept of mass consumption began to be questioned, and ideas on reducing, reusing and recycling took hold, though this occurred as the development of global value chains unleashed upon the world a tsunami of mass consumption goods never before imagined. The twenty-first century brought the dawning realisation that mankind was actually destroying the means of life, as global warming increased and environmental catastrophes multiplied. There is now the real prospect that we might take the opportunity to create more sustainable industry, reconceiving products and processes in a green renewal and focusing upon regenerating nature rather than destroying it. The ideals of a regenerative economy involves ‘seeing the world as a living system, built around reciprocal and co-evolutionary relationships and wholes, where humans, other living beings and ecosystems rely on one another for health’ (Warden, 2021).

In truth, business corporations in many industries have been inching towards a realisation of the wreckage they were incurring on the environment for some considerable time, though the resolve to actually do something about this is of more recent origin. Table 7.2 projects a transition to a sustainable economy on which we have already embarked (Hart, 1995; Trucost, 2013; CIMA, 2014). For many decades, industry has been subjected to environmental laws that have limited emissions and waste. This has enlightened enterprises that have engaged in a spirit of continuous improvement, with the benefit of lowering costs. Those businesses that have transgressed the law have faced prosecution – in the past, with penalties that did not discourage further pollution, but today, with more adverse consequences including abandonment by investors who are afraid of the risks involved. In more recent times, a sense of product stewardship has developed largely with the motivation of minimising the life-cycle cost of products, but with significant residual environmental benefits.

We are entering an era of sustainable enterprise where minimising and eliminating the environmental impact of firm growth is becoming established as a key objective and is being integrated into many firms’ operations. New business models forming in the circular and sharing economies are enabling transitions to sustainable business practices, addressing resource depletion, waste management, and resource stewardship models that go beyond the traditional life-cycle requiring collaborative governance structures, new

Table 7.2 A Natural Resource-Based View of the Firm

Strategic Capability	Environmental Driver	Key Resource	Business Advantage
Pollution Prevention (1900s-1980s)	Minimise emissions, effluents and waste	Continuous improvement	Lower costs
Product Stewardship (1980s-2000s)	Minimise life-cycle cost of products	Stakeholder integration	Pre-empt competitors
Sustainable Development (2000s-2060s)	Minimise and eliminate environmental burden of firm growth	Shared vision Circular economy	Future Position

Source: Adapted from: Stuart L. Hart (1995). A natural-resource-based view of the firm. *Academy of Management Review*, 20, Table 1, p. 992

partnership arrangements, and networks between and across sectors. New technologies may transform the management of the traditional linear economy towards a circular economy, in which waste is effectively eliminated, and the economy is restorative rather than depletive of ecosystems (World Economic Forum, 2014; European Commission, 2015a; Circle Economy, 2016; European Economy 2019). The European Commission has been developing a Circular Economy Strategy for some time: ‘The circular economy requires action at all stages of the life cycle of products: from the extraction of raw materials, through material and product design, production, distribution and consumption of goods, repair, remanufacturing and re-use schemes, to waste management and recycling’ (European Commission, 2015b).

Presently, we have a linear economy in which we extract resources at an ever-increasing pace and having made them into products then dispose of them wastefully. A circular economy is designed to be waste-free at every stage and resilient by design; closing loops, innovative, and restorative of ecosystems. This creativity is technically feasible, but what is required are the supporting institutions and values.

Closing loops refers to (post-consumer waste) recycling, slowing is about retention of the product value through maintenance, repair and refurbishment, and remanufacturing, and narrowing loops is about efficiency improvements, a notion that already is commonplace in the linear economy (Bocken et al., 2016; Bocken et al., 2017).

The central elements of the circular economy are involving revolutions in energy and efficiency, integration of value chains, bioeconomics, and sustainable transport systems and construction.

The possibilities of the circular economy are limitless, as a senior executive of Veolia, a French water resources company projected:

A priority is to go beyond the linear economy, where stakeholders are in traditional silos. In addition to preserving natural resources, shifting to a circular economy offers an opportunity to create new sources of wealth. The emergence of innovative models leads to collaborative dynamics across industries, cities, and communities that reveal new fields of sustainable value creation, such as selling services instead of products, recovering resources from waste, sharing assets, and producing green supplies. (MacArthur, 2015: 6)

According to Fücks (2015) the key elements of the circular economy include an energy revolution in both production and consumption, with the objective of achieving 100% renewable sources of energy and zero emissions. This is supported by a similar transformation of materials production and consumption, that will utilise less resources while providing a better quality of life. This revolution in production and consumption is integrated within global value chains stripped of waste as this is simply fed back into production through biological and industrial recycling. Natural materials and biological processes form the basis of production employing biomimicry to adapt human production to the biological basis of life, and by this adapting to the genius of nature. This industrial transformation is accompanied by a regeneration of the wilderness in both farming and urban communities through organic farming, and the return to an integration of agriculture and food production. In the circular economy a sustainable transport system supports mobility with autonomous and shared transport integrated into intelligent public transport systems, and international emissions-free rail and air travel. Finally, all construction and building is transformed towards environmental sustainability using natural materials, intelligent buildings that produce their own energy and natural ventilation, and with virtual gardens and roof gardens everywhere, buildings become integrated into the natural regeneration of gardens, parks, fields and forests.

Corporate net zero emissions reductions

Imaginative initiatives towards the circular and regenerative economies are very promising for a better future. But in order to have this future it is imperative to secure an early and dramatic reduction in carbon emissions to prevent further global warming and to give the time for more sustainable technologies and communities to be developed. The urgency and importance of securing the commitment to and delivery of net zero emissions is now widely understood by governments and corporations. The transition to zero emissions can be achieved. Yet, as the McKinsey Global Institute states, it is by no means certain we will succeed in making this transition:

More than 10,000 years of continuous and accelerating progress have brought human civilization to the point of threatening the very condition that made that progress possible: the stability of the earth's climate. The physical manifestations of a changing climate are increasingly visible across the globe, as are their socio-economic impacts. Both will continue to grow, most likely in a nonlinear way, until the world transitions to a net-zero economy, and unless it adapts to a changing climate in the meantime...At present, though, the net-zero equation remains unsolved: greenhouse gas emissions continue unabated and are not counterbalanced by removals, nor is the world prepared to complete the net-zero transition. Indeed, even if all net-zero commitments and national climate pledges were fulfilled, research suggests that warming would not be held to 1.5°C above preindustrial levels, increasing the odds of initiating the most catastrophic impacts of climate change... (MGI, 2022: ii)

The great achievement of the Paris COP21 was for all countries to commit to ‘strengthen the global response to the threat of climate change by keeping a global temperature rise well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius’ (UNFCCC, 2022a). The danger is, though, that if all governments and business globally do not face up to the enveloping threats and opportunities of climate change, carbon intensity will continue to increase towards the IPCC projected worst case scenario at 4% of global warming. Undoubtedly, that will precipitate the nonlinear compounding of climactic catastrophes that will endanger civilisation, let alone business survival. Figure 7.3 indicates the complex dilemmas faced by the United Nations Framework Convention on Climate Change (UNFCCC).

Securing the commitment to keep global warming below 2°C at Paris was vital, but the advance of industrialisation and urbanisation, particularly in the developing world, has meant emissions have continued to rise despite widespread efforts to reduce emissions. In fact, emissions have only tended to reduce overall temporarily during the dislocation following financial crises. Cuts in CO₂ emissions of 1.4 billion tonnes are needed to reach the new Glasgow COP target of net zero emissions by 2050. Reductions in global emissions have to be achieved in every year, not just in occasional years, such as 2016 when they reduced by 2.6%. The ‘business as usual’ decarbonisation rate of 1.4% in the period 2000 to 2016 just does not work. The earlier G20 NDCs (nationally determined contributions) to reducing emissions amounting to 3% per year, were not enough. At Glasgow, the commitment was necessary to be reinforced to stay within the 2°C increase in temperatures, and for this to be achieved the rate of decarbonisation had to increase and the net zero target brought forward to 2050 (UNFCCC, 2022b), beyond the targets of Paris (which were not achieved). Keeping to this new Glasgow emission reduction target of net zero by 2050 will require extraordinary feats of finance, coordination and implementation involving the global replacement of fossil fuels with renewable energy.

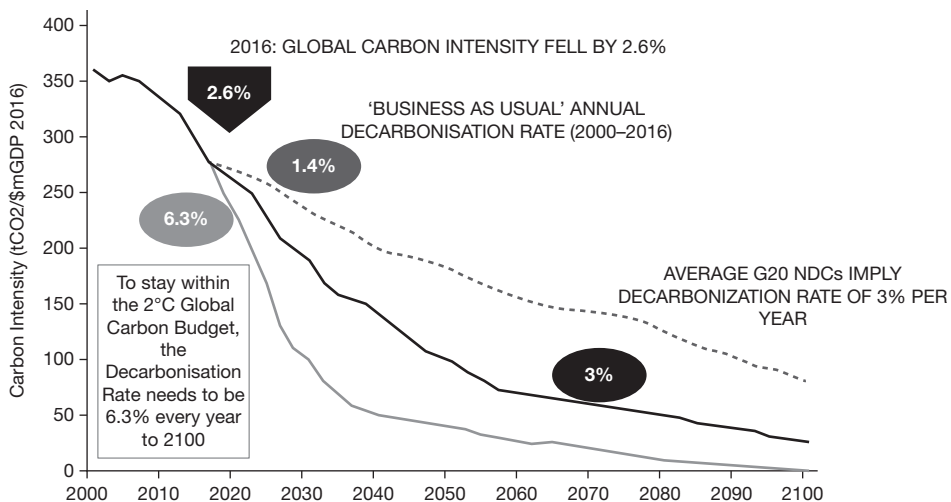


Figure 7.3 Reducing Carbon to Zero Emissions by the End of the Century

Source: Adapted from PWC (2014)

The costs of the net-zero transition are immense but necessary because the costs of inaction would be infinitely greater and more enduring. McKinsey Global Institute offers the following estimate of the immediate costs involved in the transition:

Capital spending on physical assets for energy and land-use systems in the net-zero transition between 2021 and 2050 would amount to about \$275 trillion, or \$9.2 trillion per year on average, an annual increase of as much as \$3.5 trillion from today. To put this increase in comparative terms, the \$3.5 trillion is approximately equivalent, in 2020, to half of global corporate profits, one-quarter of total tax revenue, and 7 percent of household spending. An additional \$1 trillion of today's annual spend would, moreover, need to be reallocated from high-emissions to low-emissions assets. Accounting for expected increases in spending, as incomes and populations grow, as well as for currently legislated transition policies, the required increase in spending would be lower, but still about \$1 trillion. The spending would be front-loaded, rising from 6.8 percent of GDP today to as much as 8.8 percent of GDP between 2026 and 2030 before falling. While these spending requirements are large and financing has yet to be established, many investments have positive return profiles (even independent of their role in avoiding rising physical risks) and should not be seen as merely costs. Technological innovation could reduce capital costs for net-zero technologies faster than expected. (MGI, 2022: viii)

Before governments and corporations falter because of the enormous costs involved in the emissions reductions necessary to counter climate change, they need to realise that the costs involved in doing nothing (with the resulting further catastrophic damage to the environment) are much greater still as Nicholas Stern (2007) Chief Economist of the UK Treasury and World Bank and Mark Carney (2015) the Chair of the G20 Financial Stability Board indicated some time ago, and which Trucost conservatively estimated at \$4.7 trillion per year, and escalating rapidly.

It is clear though that the pace of change towards a sustainable economy will only continue to accelerate if there is significant, insistent and sustained pressure upon governments and business to contribute to this goal from all stakeholders. Coalitions of institutions have sponsored initiatives for corporate responsibility that have driven collaborative business action for responsible business practices (Nelson, 2002; Grayson & Nelson, 2013). Science Based Targets is gathering companies committed to transitioning to a zero-carbon economy (2021). NetZero Tracker (2022) is compiling comprehensive data on both state and corporate commitments to net-zero emissions, and there is a tidal wave of nations and companies aiming at net-zero emissions in line with UN targets.

A selection of the largest publicly traded companies internationally that claim to have already committed to 100% reduction in greenhouse gas emissions is included in Table 7.3 – a number of which also are pursuing zero emissions through their value chain. These are real commitments, though they need to be monitored in terms of how 'net zero' is defined, how the policy is implemented, and the results monitored. The momentous challenge for corporations today is to manage compounding risks of doing business, and to innovate towards delivering responsible and sustainable value creation. The challenge is to develop and make coherent corporate sustainability policies and strategies, to refine them and embed them in the governance and operating processes of corporations. Most importantly, companies engaged in emissions reductions must work to encourage similar reductions throughout their value chain, and not pass on the responsibility for emissions to others.

Even if some of these companies listed are in industries where they do not have very large emissions to eliminate, this concerted effort at emissions reduction is a remarkable feat, and a beacon for other companies in more emissions-intensive industries to follow. As Eric Schmidt (2015), former Executive Chairman of Alphabet Inc. (formerly Google) commented, ‘We’re serious about environmental sustainability not because it’s trendy, but because it’s core to our values and makes good business sense. After all, the cheapest energy is the energy you don’t use in the first place. And in many places clean power is cost-competitive with conventional power.’

Table 7.3 Selected Companies With 100% Greenhouse Gas Emissions Reduction Targets

Company	Country	Net Zero	Target Year
Netflix	USA	Net Zero	2022
Vivendi	France	Net Zero	2050
General Motors	USA	Net Zero	2040
IBM	USA	Net Zero	2030
Telstra	Australia	Net Zero	2050
Accor	France	Net Zero	2050
Facebook	USA	Net Zero	2030
Hitachi	Japan	Net Zero	2050
Henkel	Germany	Climate Positive	2040
Rolls Royce	UK	Net Zero	2050
Daimler	Germany	Carbon Neutrality	2039
Astra Zeneca	UK	Net Zero	2030
Colgate	USA	Net Zero	2040
Siemens	Germany	Carbon Neutrality	2030
Unilever	UK	Net Zero	2039
Verizon	USA	Net Zero	2035
Maersk	Denmark	Net Zero	2050
Telefonica	Spain	Net Zero	2040
Johnson & Johnson	USA	Carbon Neutrality	2030
Apple	USA	Carbon Neutrality	2030
Ericsson	Sweden	Carbon Neutrality	2030
GlaxoSmithKline	UK	Net Zero	2030
Toyota	Japan	Zero Emissions	2050
Volkswagen	Germany	Carbon Neutrality	2050
BNP Paribas	France	Carbon Neutrality	2017
Novartis	Switzerland	Carbon Neutrality	2030
Blackrock	USA	Net Zero	2050
Vale	Brazil	Carbon Neutrality	2050
Alphabet	USA	Carbon Neutrality	2030
Banco di Brasil	Brazil	Climate Neutral	2019
Microsoft	USA	Climate Positive	2030

Source: Adapted from NetZero Tracker Data

Definitions:

Climate Neutral means eliminating all greenhouse gases (GHG) to zero, while also reducing all other environmental impacts an organisation might cause.

Net Zero means the company balances all greenhouse gases (GHG) released by its operations with an equivalent amount removed from the atmosphere by a range of means.

Climate Positive means the company goes beyond achieving net zero carbon emissions to create a benefit for the environment by removing additional carbon dioxide from the atmosphere.

Carbon Neutral means that any CO₂ released from a company's activities into the environment is balanced by an equivalent amount of CO₂ being removed.

Source: Adapted from NetZero Tracker Data

The range and depth of companies now committing to net-zero emissions by 2050 is impressive, but how this commitment is realised is the critical matter. A recent survey of the progress towards corporate transition to net zero suggested 'there is a clear trend that net zero targets are starting to become a "new normal" but the net zero financing needs within these carbon intensive industries are still immense...tangible investments are still rapidly needed to scale up to a material transaction to net zero' (CISL, 2021).

The pivot from shareholder value to sustainable value

$$MSV \rightarrow SVC$$

Embarking on responsible and sustainable value creation requires a transformative commitment to new thinking and strategies which connect profit with purpose, embedding accountability and transparency, listening to stakeholders, and fully understanding non-financial risks (MinterEllison, 2020a: 8). The logic of a transformation from maximising shareholder value (MSV) to sustainable value creation (SVC) is becoming compelling:

The commitment towards sustainability represents a significant shift in corporate values regarding the purpose of the firm from maximising shareholder value as a central tenet to sustainable value creation, with the strategic focus moving from short-term profit and growth, to longer-term regeneration, from a single bottom line (profit) to a triple bottom line (people, planet, profit), and from a sole focus on financial measure of value creation to multiple measures of natural, human, social and financial value (see Figure 7.4). This transformation is facilitated by advances in theory of the firm supporting accountability and sustainability; developments in policy from UN SDGs, IASB, TCFD and many other bodies; and new integrated performance measures from GRI, WEF and other international agencies (see Figure 7.4). The outcome of this transformation will be a detailed conceptual overview of strategic practices that enable action towards sustainability.

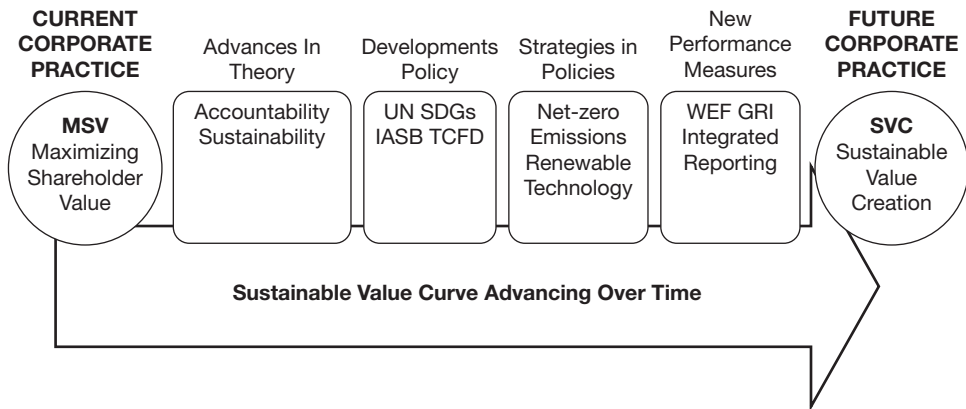


Figure 7.4 The Pivot from Shareholder Value to Sustainable Value

Some large companies are indicating capacities to seize initiatives in implementing sustainable strategies that could develop into differentiating dynamic capabilities. Microsoft recently committed to becoming carbon negative by 2030, removing all historical carbon emissions by 2050, and promoting a climate innovation fund. Microsoft is working with customers innovating to enhance reducing emissions and in strategic alliances to develop new standards and tools (Smith, 2020). BHP took the significant step to recognise Scope 3 indirect emissions along its value chain and to work at reducing these with customers (BHP, 2019). These important initiatives could prove embryonic dynamic capabilities that form the basis of new technologies and industries committed to decarbonising towards zero emissions.

It will be essential to closely monitor and measure the emissions reductions of these companies to ensure that they are achieved, not simply promised.

Wright and Nyberg (2017) graphically expose the failure of a significant number of corporations to deliver on their espoused commitments to sustainability in the recent past.

At the other end of the spectrum to the companies moving positively towards zero emissions, are the fossil fuel industries apparently clinging to a carbon economy. The largest coal, oil and gas fossil fuel companies can be directly linked to a third of all greenhouse gas emissions in the modern era (Heede, 2017). The largest 20 fossil fuel companies have contributed up to 35% of all energy-related carbon dioxide and methane worldwide, totalling 480 billion tonnes of carbon equivalent (GtCO₂e) since 1965. These firms include the major listed companies such as Chevron, Exxon, BP and Shell, together with vast state-owned companies including Saudi Aramco, Gazprom, the National Iranian Oil Co and Coal India (Heede, 2017). In 2020, Shell, Total, Repsol and Eni aligned with the emissions reductions pledged in the Paris agreement (TPI, 2020), now joined by BP.

Many of the other companies in the world's fossil fuel industries are slow to acknowledge their profoundly damaging environmental impact. According to research from Oxford University, LSE and the Transition Pathway Initiative, only 13 of the largest 132 coal, electricity and gas companies have committed to reducing their greenhouse gas emissions to net zero (TPI, 2019). Examining public disclosures of 20 coal companies, 62 electricity companies,

and 50 oil and gas companies, the research finds that only three mining companies, nine electricity companies, and one oil and gas producer have set a date by which they will reduce emissions associated with at least one of their core business activities to net zero. There was also variability in the extent of companies' commitments. All 13 companies committed to achieving net-zero direct emissions (produced directly by the extraction of coal, oil or gas, or generation of electricity), but only three committed to eliminating indirect emissions (produced by generating the electricity used in their processes or down the value chain from coal or gas extracted by the company but burned by other firms) (TPI, 2019).

In order to limit global warming to less than 2°C above pre-industrial levels, climate scientists have calculated the maximum carbon dioxide that can be released into the Earth's atmosphere. In one estimate, the Carbon Tracker Initiative calculates the carbon budget for the period 2013 to 2049 is 565 Gigatonnes (Gt), yet the fossil fuel industries are calculated to have in reserves an estimated 2,795 Gt of CO₂ emissions waiting to be exploited. In other words, according to this calculation, 80% of the world's fossil fuels reserves must stay in the ground in order to avoid the catastrophic effects of climate change (Market Forces, 2019). If the fossil fuel industries are failing to confront this dilemma, it is likely their investors will question the viability of new long-lived energy infrastructure involving positive net emissions (Pfeiffer et al., 2016). Profound shifts in energy markets are already occurring: a decade ago coal provided almost half of the US economy electricity. In May 2020, renewable power was on track to provide more electricity than coal, as utility companies retire hundreds of aging coal-burning power plants (Plumer, 2020).

Integrating sustainability measures and reporting standards

The effort towards making the transition from shareholder value maximising to sustainable value creation has not been assisted by the competition and confusion around the right performance measures for the new objectives. 'Climate change, environmental degradation, human rights and social concerns, are of growing global concern to companies, investors, policymakers, regulators and civil society. In addition, internally generated intangibles have become a major component of the market value of companies. In response, hundreds of non-financial information (NFI) reporting frameworks and standards have been developed, which are leading to confusion and the potential for greenwashing' (Accountancy Europe, 2020).

The proliferation of international, national and private sector initiatives on sustainability, and sophisticated policies for corporate sustainability and social responsibility, have gained international prominence. However, questions remain as to what degree these policies have become fully understood, refined and embedded in the governance and operating processes of corporations? Have these policies any impact on fundamental business models? How effectively have the policies been implemented in practice? These have been enduring concerns in the development of social and environmental policies. The lack of consistent and integrated measures for the performance of corporate responsibility and sustainability is a continuing issue.

As Brian Moynihan, Chairman and CEO Bank of America and chair of the International Business Council of the World Economic Forum, commented:

The absence of a generally accepted international framework for the reporting of material aspects of ESG and other relevant considerations for long-term value creation contrasts with the well-established standards that exist for reporting and verifying financial performance. ...Multiple ESG measurement and reporting frameworks and lack of consistency and comparability of metrics were identified as pain points that hinder the ability of companies to meaningfully and credibly demonstrate the progress they are making on sustainability, including their contribution to the SDGs. (WEF, 2020a: 8)

The UN Sustainable Development Goals (SDGs) adopted in 2015 for delivery by 2030 are the most inspiring and integrated blueprint for shared prosperity in a sustainable world (UN, 2019). The UN Global Compact which coordinates the SDGs has 13,000 corporate partners in 170 countries. Translating the SDGs into practical policy tools and measures is an ongoing task of leading corporations around the world, ‘an essential lever of systemic transformation’ (UN, 2019: 29).

The most critical component is SDG 13 on Climate Change, informed by the Intergovernmental Panel on Climate Change target of zero emissions before 2050. By December 2019, a total of 177 international companies committed to achieving net zero emissions by 2050 (supported by the Net Zero Asset Owner Alliance committed to converting their portfolios to net zero emissions). The World Business Council for Sustainable Development (WBCSD) – a consortium of international corporations – has assisted in the coordination of initiatives around the UN SDG goals.

In reporting on performance against the SDGs it is important that there is a clear focus on the materiality of the outcomes, as Regnan (2020) argues: ‘The defining feature of the SDGs is their grounding in “real-world” outcomes rather than corporate performance or investment value. SDG reporting must therefore address organisations’ contributions to the achievement of the Sustainable Development Goals. We strongly recommend that the Guide emphasise this focus for SDGs, to the exclusion of alternative objectives’. That is, corporations must report on their practical achievements against the specific SDG objectives and not cloud their responses with generalities about their performance more intent on obfuscation than accountability.

There is a proposal to establish an International Non-Financial Reporting Standards Board (INSB) to allow for interconnected standard setting and match the authority of the IASB (International Accounting Standards Board) (Accountancy Europe, 2020). A significant effort to harness synergies between the different responsibility and sustainability standards is currently being made by the International Business Council (IBC) with the support of KPMG, EY, PwC and Deloitte specialists (WEF, 2020). The objective is to construct a core set of ESG (environmental, social and governance) metrics that could be disclosed in annual reports of companies, capable of verification and assurance, and raising the levels of transparency for all stakeholders. The IBC metrics and disclosures are organised in four pillars aligned with the UN SDGs: Principles of Governance, Planet, People and Prosperity. The integrated metrics are drawn from the Global Reporting Initiative (GRI), Sustainability Accounting Standards Board (SASB), and Task Force on Climate Related Financial Disclosures (TCFD).

Two sets of related metrics are proposed: core (well-established and quantitative reporting measures); and expanded (less-established measures conveying impact in a wider value chain and measuring sustainable value creation). In summary, the metrics encompass the four themes of (1) Governance: purpose, quality, stakeholder engagement, ethical behaviour, risk and opportunity oversight; (2) Planet: climate change; nature loss; fresh water; (3) People: dignity and equality; health and wellbeing; skills for the future; (4) Prosperity: wealth creation and employment; innovation in better products and services; community and social vitality. The IBC hopes to catalyse progress towards consistent reporting on key dimensions of sustainable value creation. Critical to the urgency of this process will be the insistent threat of climate change.

The criteria for prioritising the themes and metrics were consistency with existing frameworks and standards; materiality to long-term value creation; extent of actionability; universality across industries and business models; and monitoring feasibility. In this way, the themes and metrics are consistent with existing frameworks and business models, can serve as a proxy for future value creation and impact, may be applied consistently over time, and can be applied across industries. This provides a useful set of measures to enable companies to demonstrate their long-term viability and sustainable business practices. This initiative is part of a broader effort to build a coalition that accelerates progress towards a system-wide solution that results in greater quality and comparability of reporting on material factors influencing companies' sustainable value creation and contribution to progress towards the UN SDGs. This is an important part of the drive towards inter-connected and integrated accounting standards. For some time, climate change, environmental degradation, and internally generated intangibles have been addressed by non-financial information reporting. However, the many non-financial reporting initiatives have generated confusion. To respond effectively to these global issues and stakeholder demands, non-financial information needs to be harmonised and connected to financial reporting (Ballou et al., 2019; Accountancy Europe, 2020).

As the Bank for International Settlements states, 'Climate change poses an unprecedented challenge to the governance of global socioeconomic and financial systems' (2020: 5). In April 2019, in a speech on Climate Change and the Economy, Guy Debelle, the Deputy Governor of the Reserve Bank of Australia said: 'Companies that generate significant pollution might face reputational damage or legal liability from their activities, and changes to regulation could cause previously valuable assets to become uneconomic' (RBA, 2019).

Following first movers, the Bank of England and the Banque de France, on 30 January 2020 the Australian Prudential Regulation Authority (APRA) announced that it will move to conduct stress tests on large Australian insurers, banks and superannuation funds to test their resilience to the physical and transition risks associated with different possible climate scenarios. In November 2019, former royal commissioner Kenneth Hayne made a significant public intervention, stating that the law and science are clear: 'a director acting in the best interests of the company must take account of, and the board must report publicly on, climate-related risks and issues relevant to the entity' (CPD, 2019). Hayne dismissed 'learned helplessness and entrenched short-termism' as failing in the director's duty to act in the best interest of the company.

A recent analysis of sustainability reports of 1000 companies in the European Union on their performance regarding the European Union's Non-Financial Reporting Directive is

instructive (Alliance for Corporate Transparency (ACT), 2020). This survey includes a strategic perspective on business models and governance, environment, employees, human rights, anti-corruption, and positive impacts. The conclusion is that largely ‘companies are reporting policy not outcomes’. The reporting is indeed happening. Non-Financial Reporting is taking place in 19 of every 20 companies assessed. However, results show that the Directive’s firm intent to link ‘policies, risks and results together in reporting is falling short’ (ACT, 2020: 4). For example, and most critically, on climate change 82% of companies have policies, but only 35% have targets, and fewer still, 28%, report on outcomes.

This mirrors the Australian context in research conducted by Agarwal et al. (2019) with the ABS that found while environmental management was economically and statistically significantly associated with measures of productivity, most Australian organisations have not yet adopted basic value adding environmental management practices. Business commitments to emissions reductions and sustainable value creation must match the scale of increasing impact of climate change, and the major developments in public policy to deal with climate change. While decarbonisation of industries is the most urgent priority, international policy from the European Union and other authorities indicates the importance of transformation in industry of energy and materials in which the Australian economy is trade exposed. It is important to examine effective implementation of corporate climate change policies and develop a ‘readiness’ indicator of preparedness.

How are business goals and evidence-based targets set and aligned with regulatory and co-regulatory regimes? The proliferation and confusion of standards in sustainability measurement and reporting have not served the field well. Among the most important standard setting bodies are the Climate Disclosure Project (CDP), Climate Disclosure Standards Board (CDSB), Global Reporting Initiative (GRI), International Integrated Reporting Council (IIRC) and Sustainability Accounting Standards Board (SASB) (together with the International Accounting Standards Board (IASB) and Financial and Accounting Standards Board (FASB)). There is now recognition that these bodies need to work together towards comprehensive corporate reporting (CDP, 2020) (see Figure 7.5). The WEF and IBC have developed a common

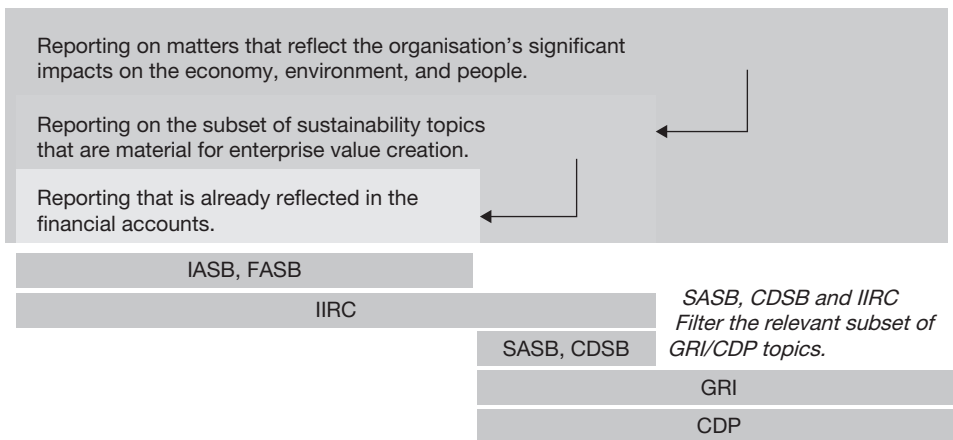


Figure 7.5 Integration of International Reporting Standards on Finance and Sustainability (CDP, 2020)

set of 21 baseline sustainability metrics drawn from other standards. There is movement towards clear and coherent standards on financial reporting that include the impact of business on economy, environment and people.

In the interests of full disclosure and assisting other companies and organisations to apply these new measures it will be important for companies to explain how they navigate barriers to integrated interpretation of standards and measures with detailed case studies of exemplary practices. What is required are website repositories containing artefacts, case studies and blogs to demystify the process of transformation towards sustainability.

The implementation of sustainable value creation

The mode of governance and strategy to deliver corporate responsibility and sustainability, together with the accountability measures to assure this is a key policy question, remain to be resolved effectively in all jurisdictions. Strategic stakeholder relationships involve complex interdependencies, and concern for the natural environment leading to a conception of the interconnection of the economy, society and environment (Bansal & Hee-Chan Song, 2017). This suggests the need for multidimensional strategic and resource coordination skills and measures of accountability and performance.

The institutional mechanisms to deliver responsibility and sustainability are continuing to be developed in regulations, policies and norms that inform understanding and constrain or enable behaviour. The firm is seen as a pivotal actor in initiating socially and environmentally desirable outcomes: ‘Corporations have a decisive impact on outcomes of employment, consumption, environmental quality, social inequality and a host of other issues’ (Brammer et al., 2012: 6). Matten and Moon (2020) reflecting on the expansive development of corporate social responsibility and sustainability in recent decades refer to the focus extending from core stakeholders to whole value chains and the planet, from state to international governance, and the rationale of corporate social responsibility from the use of corporate wealth for social ends, to seeing responsible business as a means of wealth generation as corporate social responsibility becomes integrated into core business strategies.

The implementation of responsible and sustainable value creation in large corporations internationally involves effective commitments to:

- the interpretation and implementation of corporate purpose;
- the understanding of the social licence to operate;
- the quality and impact of director and executive leadership on responsibility and sustainability;
- integrating and embedding responsibility and sustainability values;
- setting ambitious targets and strategies on responsibility and sustainability;
- executive and board monitoring of non-financial performance;
- ensuring responsibility and sustainability are part of the core business models and strategies;
- implementing operations and measures of performance to deliver responsibility and sustainability;

- examining and developing the range, quality and depth of responsible and sustainable products and services offered;
- discovering the extent responsibility and sustainability values, policies and practices are implemented in the supply chain;
- assuring ESG and sustainability measures are consistently and rigorously applied, and the results disclosed;
- working to develop sustainable relationships with all key stakeholders;
- engaging in active communication/reporting/advocacy around responsibility and sustainability;
- securing performance relative to key baseline sustainability metrics.

Corporations, as collectively the largest economic entities in existence, have the greatest impact on emissions, and have a profound obligation to respond to this sustainability challenge. Many corporations have embarked on fulfilling this commitment. Both at government and corporate level, policies are beginning to be introduced around the world to progressively and substantially reduce carbon emissions towards zero before the end of the century in order to keep global warming to a maximum of two degrees (IPCC, 2014). Decarbonising towards zero emissions will be the greatest social and economic challenge of the twenty-first century (World Bank, 2015). This is an imperative which financial markets and institutions are beginning to accept and to pursue (Carney, 2015; EIU, 2017; OECD, 2017c).

A new era is required of purposeful corporations, conscious of their responsibilities to the economy, community and environment (see Figure 7.6). In the purposeful corporation, engagement in social and environmental responsibility will be reinforced by legal obligations in the Corporations Acts and detailed in the companies' articles of association. Investment will be by patient capital interested in sustainable returns, and rewards will be for sustainable value creation (Big Innovation Centre, 2017; Levillain & Segrestin, 2019; British Academy, 2021; Hurth & Vrettos, 2021).

Conclusions

The creative destruction provided by technological advance and the market system has proved the defining impetus of both the great achievements of the last three centuries, and among the most damaging catastrophes. This cycle of innovation, crisis and reform has come to be almost accepted as fundamental to the momentum of a free society. But with climate change we have reached the limits of this logic, and need now to build a more open, sustainable, inclusive and equitable economy and society, in balance with nature and restoring the ecology.

Since its inception, the corporation has demonstrated a remarkable capacity for adaptation and evolution as new threats to its existence and operations occurred, and new strategic opportunities realised. Today, the licence to operate of contemporary corporations continues to be contested, but in a more critical context than ever before. This profound challenge will prove the greatest test of purpose, viability, performance and relevance the corporation has faced since its inception. The reason business will be tested more seriously than ever before is

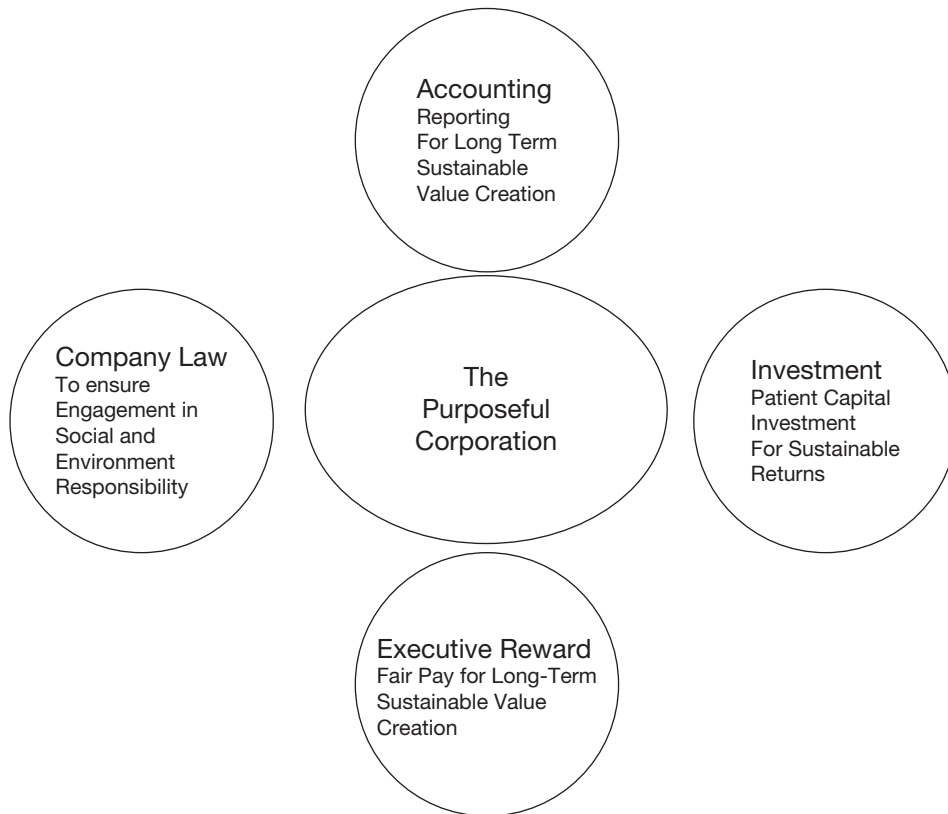


Figure 7.6 The Purposeful Corporation

Source: Adapted from *The Purposeful Company Big Innovation* (2017)

that we have reached the limits of the capacity of the Earth to sustain economic and industrial development as we have experienced it for the last two hundred years.

Directors need to incorporate environmental and social responsibility into their decision-making as an essential part of a balanced assessment of the risks and opportunities facing the company. The re-evaluation of fiduciary duty has potentially profound implications for the theory and practice of the corporation. The integration of environmental, social and governance consideration into investment decisions and strategic operations is a continually evolving process conditional on the nature of external threats and corporate and political ability and willingness to address them. Ultimately, only a fundamental redesign of corporate forms, objectives and value measures can fully meet the emerging realities of corporate responsibility and sustainability.