Corporate Leadership for Environment Friendly and Sustainable Growth^

Prof Colin Coulson-Thomas*

One impact of the Covid-19 pandemic has been that around the world for a period the air that many people breathe was less harmful. Some reported a sky that seemed bluer in colour in comparison with before, or in the absence of traffic noise they mentioned hearing bird song, the lack of which alerted Rachel Carson to the impact of pesticides on wildlife (Carson, 1962). Others noticed distant trees, hills or mountains that had been long hidden behind a fog of pollution. Will the focus of many corporate leaders upon pandemic related issues and economic survival and recovery distract them from other concerns and priorities? Will they quickly revert to previous business and operating practices that damage the environment, reduce biodiversity and contribute to climate change? To what extent will a resumption of global economic growth be environment friendly, responsible and sustainable? Given the collective effort needed to tackle Covid-19, will future growth be more inclusive? What leadership focus and skills will be required to recover from recession while addressing inclusion and environmental concerns and longer-term challenges such as climate change?

Is a return to previous business models, patterns of work, hectic lifestyles and headlong growth desirable and/or advisable? The damaging impact of human activity upon the environment has been relentless (UNEP, 2019). The underwater environment may be barely noticeable to many people, but certain features and aspects of it are visible from space. Among them, coral reefs that have built up over millennia now seem destined for extinction unless we can quickly reduce and reverse carbon dioxide emissions (Roberts, 2019). In recovering from the pandemic, business leaders now have an unprecedented opportunity to contribute to the building of a 'new normal' that embraces social and environmental aspirations and considerations as well as economic and financial ones (Coulson-Thomas, 2020a & b). Asking the right questions can be a key leadership skill for determining focus and progress. What questions should directors ask about the leadership they provide, climate change, governance, pollution control, water and waste management, and energy security?

Existential threats, including from disease, famine, pestilence and climate change, are not new. Over the centuries and millennia they have resulted in the decline of various communities and civilisation, including cities of significance at the time (Woolf, 2020). The demise of certain past civilisations underlines the importance of a harmonious relationship with the natural world and not over-exploiting natural resources (Hanbury-Tenison, 2020). A perennial challenge for leaders operating in the context of sometimes powerful vested and self-interests has been knowing who to consult and listen to for independent and objective advice, and what questions to ask, particularly when authoritative and convincing answers are not available. Assessing how much change different interests might accept and who might be allies or opponents of significant steps can require stakeholder consultation, engagement and involvement and understanding their evolving aspirations, preferences and priorities.

Transformational Board Leadership for Sustainability

Different aspects of contemporary corporate activities, conduct and operations vary in the degree to which they are sustainable. They also differ in the extent to which certain stakeholders, and in some cases many people, might wish them to be sustained. Reaction against operations that damage the environment, reduce biodiversity, consume scarce natural capital and/or contribute to global warming appears to be growing, especially among younger people concerned about their future (Marris, 2019; Sengupta, 2019). Concerned members of the 'climate generation' may need to be resilient and persistent while campaigning for action to address climate change (Ray, 2020).Without certain changes of corporate purpose, practice and priorities, and for most companies: is 'green growth' possible and sustainable? After experience of Covid-19, how do stakeholders now feel about its achievement? Is there an opportunity to secure new alliances and wider support?

How should 'green growth' be defined, and what role should the safeguarding of natural assets and sustainability play in corporate growth and development strategy (OECD, 2011; Ahi and Searcy, 2013)? Can 'green growth' be achieved by market-based strategies and what form should these take, or is Government and regulatory intervention required? Are too many people essentially selfish and greedy and ESG investors too few in number and powerless to prevent damaging externalities being ignored? How might more of mankind live in greater harmony with nature? What can people today learn from ancient wisdom and the practices of past generations (Coulson-Thomas, 2019)? How do directors and boards move environmental strategies on from compliance with dated and inadequate requirements to creative solutions to current challenges and more responsible business practices and models?

What changes of strategy and new strategies are required to conserve rather than destroy, achieve an ecological balance and use natural resources more responsibly and sustainably? Is a more holistic and integrated approach required to build a sustainable organisation (Perrott, 2014)? Are there steps that could be taken to rescue, revive, restore and/or recreate aspects of the environment and biodiversity that have been lost, and how might they be funded and implemented? Breakthroughs sometimes occur when different and even awkward questions are asked that challenge previous assumptions and conventional wisdom (Galbraith, 1958; Kuhn, 1962). Where is innovation and creative entrepreneurship most required? Must more companies move in a different direction? Are the changes needed sufficiently radical and urgent to require transformational leadership, rather than incremental improvement?

Is now the time for directors and other corporate leaders to ask direct questions about corporate accountabilities and focus (Handy, 2002; Coulson-Thomas, 2020a & b))? Should more boards now acknowledge responsibilities to a wider range of stakeholders? Will enough of them incorporate environmental and social as well as economic considerations into their business development strategies, to achieve more responsible, inclusive and sustainable growth? Are there additional steps and interventions that might speed up the transition to a lower carbon future and achievement of UN (2015) sustainable development goals (SDGs)? What changes to board and leadership policies, practices and priorities are needed to achieve the corporate, collective and collaborative action that is required to achieve SDGs?

Combating Climate Change: The edge of a New Frontier

While coping with Covid-19 and its consequences, how many boards have retained a focus upon the parallel challenges of climate change and the environment? Given uncertainty over the likely timing, duration, nature, extent and speed of recovery from the pandemic and the risk of resurgence and further waves of infection and local and national lockdowns, have some strategies and plans been abandoned or put on hold? Are boards assessing or even aware of breakthroughs and various developments that could help them to address climate change (Hawken, 2017)? Is the adaptation and innovation required to cope with it still seen as an arena of opportunity? What changes to current corporate governance arrangements are required to simultaneously handle multiple ambiguities and issues and deliver a recovery that achieves climate security and SDGs (UN 2015)? How might and should stakeholders be engaged to secure the support required for agreeing and adopting the changes needed?

Against a background of possible resurgence of Covid-19 and its longer term impact, are the uncertainties and risks of climate change being effectively managed? How is this manifest in terms of changes of action, intention and aspiration? Do boards sometimes just focus upon particular aspects of environmental changes and assume there will be time to adjust? Given the multiple consequences that climate change can have, is the world in danger of becoming uninhabitable (Wallace-Wells, 2019)? What steps are being taken to increase corporate resilience to climate and other challenges, including extreme weather events and food, water and energy security? Are there particular practices, technologies and changes of approach, or different business and/or operating models that would increase resilience? What is being done to help customers and other stakeholders to become more resilient? Given stressed balance sheets, squeezed cash flows and higher public debt how will required innovations be funded?

In a post-pandemic era, boards may feel under greater pressure to both resume and expand production in order to speed up and increase the extent of a hoped for recovery. Will directors succumb to appeals to boost output irrespective of previous environmental concerns, or will they act to reduce the impact of a resurgence of economic activity upon global warming and climate change? Where will climate change rank in 'new normal' corporate priorities? What steps might and should boards take to increase or enhance corporate contributions to the achievement of voluntary national Paris Agreement (2015) obligations? Are there approaches to energy and/or waste management that could help to tackle climate change? Should board decision-making criteria be reviewed? For example, how might waste disposal decisions take account of the full life-cycle and long-term costs of waste storage, disposal and decay?

Monitoring External and Environmental Developments

Leaders need to ensure that executives do not focus on internal and corporate issues to such as extent that external and contextual developments and requirements are overlooked. Issue monitoring and management processes can track climate and other environmental risks and trends, assess their impacts on corporate operations, customers, suppliers and other stakeholders, and determine the responses that are required at local, business unit and corporate levels. Monitoring and seeking to understand a kaleidoscope of changing

developments, forces and views in a fluid and shifting situation may help people to shape emerging strategic responses to environmental issues and concerns (Brown, 2017).

Given the risk of a resurgence of the Covid-19 virus and further local lockdowns, equilibrium, stability and a clear and universal pattern or trend should not be assumed. Are directors tracking changes in the rate of change itself, rather than just assuming that present trends will continue (Dorling, 2020)? Is the possibility of extreme weather events and physical hazards taken into account? Are crisis management, emergency and disaster recovery plans in place? Have these arrangements been recently tested? Have boards considered the socio-economic impacts of climate change and events upon the people of organisations, value chains and the communities and the societies in which they operate?

Are boards open to ideas and possibilities and proactive? Do they track innovations, developments and opportunities relating to climate change and its mitigation (Hawken, 2017)? Could more be done to stimulate creativity, encourage innovation and support entrepreneurship (Coulson-Thomas, 2017)? Are solutions to climate change, achieving SDGs and pandemic related challenges being actively explored? Are alternative business and operating models and new ways of financing them being considered? Are customers, suppliers and other stakeholders involved in consultations? How likely is it that the adaptation, mitigation and development options being assessed and measures in the pipeline will enable the required transition to a low carbon economy? What additional steps, interventions and/or collaborations are required?

Environmental Governance for Economic Growth

The UN advises national Governments to periodically review their policies and governance arrangements relating to the environment and ensure they adopt a comprehensive and systematic approach (UNEP, 2019). Are business leaders doing likewise and questioning corporate environmental governance? From a corporate perspective, what factors would most help or hinder the achievement of an environmentally sustainable future? How do they compare with those emanating from 'helps' and 'hinders' analyses relating to other corporate objectives? What corporate activities and initiatives would directors like to see more or less of, and what is missing? How might customers, investors and other stakeholders respond to these questions? Are they engaged, consulted or involved over changes of governance, purpose, objectives, strategies and policies concerned with environmental sustainability?

Are there particular approaches, strategies or business and/or excellence models that are more or less environmentally friendly than others? Which of them need to be changed, dropped or replaced? Are their internal and external environmental impacts and/or consequences assessed, tracked and reported to senior management? Might a slowdown in economic and population growth reduce the possible severity of some social and environmental issues (Dorling, 2020)? Are more sustainable development alternatives investigated and adopted? As and when they and innovations and breakthroughs occur, are solutions developed to environmental and green growth issues? Can they be quickly scaled up? What, if any, environmental governance and/or management changes are needed to achieve this?

How likely is it that the environmental governance changes required to achieve sustainable 'green growth' will occur? Will Government and regulatory intervention be required to achieve this outcome, and if so, what form should it take? To what extent can the market be relied upon to provide solutions for strategic, operational and environmental challenges? Do we already know what needs to be done in terms of policies and business development models, and prior to Covid-19 was the required finance and technology already largely available (Stern, 2019)? What needs to change in terms in terms of market measures, incentives, collaboration and/or signals for sustainable 'green growth' to occur? Do corporate reward and bonus policies encourage responsible or irresponsible conduct (Treanor, 2020)? How might, could or should necessary changes be justified, initiated, funded and introduced?

Stakeholder Concerns and Contributions

Economic growth has drawbacks as well as advantages, particularly if environmental and climate change impacts are taken into account (Coulson-Thomas, 2020a). During lockdown, how many stakeholders have had an opportunity to reassess what is important to them, their priorities and certain trade-offs that they have made, such as between quantity of consumer goods and quality of life? Can more sometimes be less and less sometimes be more? For example, how many people can our planet support? Do we need social and societal transformation, or a revolution in individual and collective behaviour, to reduce birth rates in many parts of the world, or are some environmentally beneficial trends already occurring (Tucker, 2019; Dorling, 2020)? Do we need a first principles rethink and re-evaluation of the purpose and priorities of companies and how and for whose benefit they are governed (Handy, 2002)? How might this be undertaken and who should be involved?

What sacrifices and/or contributions might different categories of stakeholder be prepared to make to enable more sustainable and 'green growth' to occur? Have companies identified likely supporters and opponents of such a goal? Are ways of encouraging the former, countering the latter and engaging stakeholders being explored? How might necessary changes be funded? Directors should be listening leaders who monitor and respond to stakeholder concerns (Coulson-Thomas, 2014). What proportion of customers might pay a premium for greener and more sustainably produced offerings? Might Environmental, Social and Governance (ESG) investors provide the finance that could be required? Would there be an appetite and market demand for further mutual funds that meet specific ESG criteria?

Water Management: Addressing a Crisis

Throughout history cities and civilisations have been particularly dependent upon water from rivers and its responsible management and use (Smith, 2020). Where do water availability, management and conservation feature on board agendas and among corporate objectives and priorities? In recent years, fresh, potable and usable water supplies have fallen short of rising demand (Gleick, 2014 & 2018). How aware are directors of water challenges, issues and shortages within the communities, cities and societies in which the companies for which they are responsible operate? Are board members apprised of corporate water consumption in relation to local supply and the pressures and external costs caused by corporate operations?

What perverse incentives are too often causing water to be over used? Are boards providing leadership and direction to corporate and collective efforts to achieve more integrated and responsible management and conservation of water resources?

How will challenges such as local, regional or national potable water crises impact upon corporate aspirations, objectives, strategies and plans? Are certain cities and patterns and locations of urban living and industrial activity feasible longer-term at an acceptable financial and environmental cost? What architectural, planning and conceptual changes need to occur if we are to create viable future cities (Dobraszczyk, 2019)? What needs to be done to better harvest, store, treat and transport rain water and improve ground water management? How might this be funded and achieved? How could certain aspects of past practices be improved? How might excessive, unnecessary and undesirable uses of water and its contamination be prevented? What combination of appeals, directives, laws, regulations, incentives and pricing or other market mechanisms might best achieve SDGs, specific water protection and/or conservation objectives, and the more equitable and responsible use of water?

What further steps are needed to improve water resource efficiency in the agricultural, industrial and domestic sectors (Werner and Collins, 2012)? Are those organisations and activities which are the biggest net users of water paying a fair share of the costs of supplying it? Should they also bear some liability for the external costs being imposed upon others as a result of any consequential water shortages? What market mechanisms and/or forms of public intervention might redress the balance between costs and benefits, supply and demand, and 'winners' and 'losers'? How many boards know the extent to which corporate operations are net positive or negative in terms of factors such as water usage and pollution? What more could or should they do to achieve a positive balance, encourage the more equitable, responsible and sustainable use and allocation of supply, and achieve greater water security?

Increasing and Distributing Usable Water Supplies

Responsible leadership can involve asking challenging questions. Taking a longer term strategic view and externalities into account, what more could be done to increase access to a secure and sustainable supply of usable water? Might some corporate activities be no longer sustainable when the interests of a wider range of stakeholders are taken into account? Are boards considering what could happen as wells and affordable water supplies dry up (Rowe, 2019)? Should certain activities be scaled back, changed or relocated closer to a water supply? What could and should be done to increase water supplies, whether through the interlinking of rivers, desalination of sea water, replenishment of water tables or recycling and reuse? How might and should each of these and other possibilities be funded? What additional supplies of water might result and when are these likely to be available?

How should available supplies of water be fairly distributed between competing agricultural, industrial and domestic demands? At what level should critical decisions about access and quotas be taken? Access to safe and clean water and safe and hygienic sanitation has been recognised by the UN General Assembly (2010) as a basic human right. What new forms of collaboration are required and with whom to make it a reality? What are the opportunities and

challenges for providing universal and equitable access to safe drinking water? What needs to change for directors to acknowledge their responsibilities in relation to water use and the access of others? Could more be done to understand stakeholder uses of water? Could helping and supporting them become a differentiator and business opportunity?

Energy Security: Sustainable Energy Options

Energy generation is a significant contributor to global warming. In many locations the burning of fossil fuels to generate electricity has increased because total energy demand has risen more quickly than fossil fuel generated production can be replaced by renewables. Should the first priority of responsible directors be to reduce energy consumption, energy wastage and the use of fossil fuels? Is the extravagant consumption of energy by many societies and communities an unnecessary indulgence and example of conspicuous consumption (Veblen, 1899)? Even if off-peak energy at cheaper prices is available, must so many cities be lit up like Christmas Trees at night? While recognising security issues, would turning external lights off during quiet and traffic free periods in residential areas allow more people to see the stars and encourage them to benefit from deeper and undisturbed sleep?

What needs to be done to encourage a more responsible demand for energy and ensure that this is met with a sustainable supply? Recent progress in the transition to renewable energy sources has fallen below what is needed to meet Paris Agreement (2015) goals (UNEP, 2019). What additional mechanisms are needed to replace fossil fuels by exploiting and expanding renewable energy sources? How might boards address a number of environmental issues, for example by using the principles of the circular economy (Long et al, 2020)? Could agricultural, food and other waste be used to generate electricity? Are there specific public interventions or market-based incentives that might speed up this process of reuse? What is the status of the roadmap for India's target of an additional 175GW of renewable energy by 2022? What can and should directors and boards do to help to bring it about?

Assessing the Effectiveness of Private and Public Sector Responses

How effective are corporate energy risk management, saving and security objectives, strategies, policies and plans? Are customers, supply chain partners and other stakeholders involved in their formulation? When were they last reviewed by the board? How energy resilient are supply chains and operating and business models? What back-up, disaster and recovery arrangements are in place to cope with an interruption of supply? How quickly can replacement energy provision become available? How cost-effective are sustainable and green energy options? Disruptive technologies within the renewable energy sector could also have a wider social impact in enabling more sustainable development (Schuelke-Leech, 2018). What calls should directors make if companies that have the choice opt not to purchase energy from a renewable source because fossil fuel generated electricity is cheaper?

How effective have Government, state and local initiatives to encourage the greater use of renewable energy been? How will the end-of-life costs of reducing fossil fuel production be addressed (Rowe, 2019)? Will continuing innovation and a trend towards lower renewable energy costs be sufficient to encourage more companies and other enterprises and public

organisations to purchase their energy from renewable sources? Are additional Government measures and encouragements required? Could people be manoeuvred, guided, steered or pushed in a different direction (Thaler and Sunstein, 2008)? What renewable energy initiatives are underway in different jurisdictions and local contexts, and how are companies responding to them? What changes might increase their take up and impact?

Pollution Prevention and Waste Management

Environmental Pollution and the discharge of waste threaten human health and the planet's ecosystems (UNEP, 2019). The treatment of the River Ganges illustrates the damage that human activity can do to an ecosystem that is of special importance to large numbers of people (Sen, 2019). What steps could and should directors, legislators, enforcement agencies and regulators take to reduce the production and discharge of harmful pollutants and the generation of waste? How could waste management, recycling and/or reuse be improved? How might the principles of the circular economy help (Long et al, 2020)? How can more companies be made accountable for the negative externalities resulting from their activities and operations? Could pricing be used to cover social costs (Coase, 1960; Tybout, 1972)?

Innovation and commitment is required to cope with the global challenge of dealing with waste (Rowe, 2020). What questions should directors ask to avoid the irresponsible handling and/or disposal of hazardous waste? How should hazardous and e-waste be managed, transported and its recycling improved? Is closer surveillance and monitoring required? Should stricter penalties be enforced or incentives introduced (Thaler and Sunstein, 2008)? The data on solid waste around the world is alarming (World Bank, 2018). Given its negative and long-lasting impact upon the environment, should all boards be taking steps to firstly reduce and then eliminate the single use of plastic? What strategies, measures and options are there for achieving this? How can people be weaned off their use of plastic? How might stakeholder support be best obtained? Who should be held accountable and by what means for the harm caused by plastic and other waste and the cost of its collection and containment?

Should reparations be paid by their sources to cover the cost of cleaning up plastic and other waste and of restoration or recovering from habitat and environmental damage? The oceans cover over 70% of the world's surface and contain some 97% of the world's water. How focused are directors upon the pollution generated by the entities for which they are responsible and the impact of human activities and resulting effluents and waste upon marine habitats (Roberts, 2019)? What needs to be done to better protect the oceans, save them from oil, chemical, plastic and other pollutants, and help them and revive and restore marine life? What new measures and corporate, collective and international commitments are required? Could action to improve marine and other environments result in potential business, engagement and innovation opportunities? Who might collaborate to realise them?

The Circular Economy: Corporate and Government Action

Should participating in the circular economy be a higher priority for more boards? Is this an arena in which rhetoric needs to be matched by reality? Externalities need to be taken into account in current activities and in relation to circular economy claims and proposals, for

example, in relation to the rebound or negative environmental effects of asset sharing. To give an example, when there is increased utilisation of boats that are shared, is account taken of their greater emissions and those from increased air and vehicle travel to where they are moored (Warmington-Lundstrom and Laurenti, 2020)? Are some directors more interested in appearing to be doing something, rather than understanding what is actually happening? How can boards ensure that all relevant externalities are taken into account?

There is an urgent need for a more developed recycling and reprocessing infrastructure, especially as opportunities to export plastic and other rubbish diminish as more countries refuse to import it (WRAP, 2019). Greater priority needs to be given to waste reduction, prevention, reuse, recycling, recovery, composting and responsible disposal and dumping. Does the policy and regulatory framework support the development of the circular economy (Maitre, 2018)? The perspective of Government has maximum impact on the implementation of the circular economy in supply chains, as it can be promoted through laws, policies, risk reduction via taxes and strict governance arrangements (Govindan and Hasanagic, 2018).

What pollution control and sustainable environmental initiatives are underway and/or planned in different jurisdictions and local contexts? What are the impacts of these initiatives likely to be and how might these be improved? Do they and other public measures influence relevant board discussions and environmental decision making (McGuire, 2012)? Should directors be concerned about the possible costs of penalties, reparations and clean-ups? Are corporate decisions mainly based upon internal and financial considerations? To what extent are externalities and environmental factors taken into account? How might corporate actions be made more environmentally responsible and better aligned with SDGs?

Addressing Environmental Challenges and Opportunities

Given the imperative for urgent, decisive and systematic action in relation to environmental challenges and opportunities, an obvious question that many directors and boards should consider is "why are we waiting" (Stern, 2015)? The coexistence of other challenges, such as responding to the Covid-19 pandemic and recovering from recession, should not be allowed to distract attention from environmental concerns, when addressing the current situation may provide the possibility of pursuing multiple objectives simultaneously. The global pandemic could represent a once in a lifetime opportunity for thoughtful and responsible directors and boards to re-boot enterprise, re-purpose companies and re-engage with stakeholders and the communities and societies in which businesses operate (Coulson-Thomas, 2020b).

With corporate resources stretched, more boards may need to explore and initiate collaboration with complementary entities and co-create and innovate with customers, suppliers and business partners to make progress in an acceptable timescale and achieve the scale of impact and influence required. Supporting collective and joined-up responses to environmental issues, climate change and Covid-19, and working to ensure a more resilient, sustainable and inclusive future, could make younger generations more aware of the role that caring capitalism could play in their lives (Coulson-Thomas, 2020b). Ensuring that this happens requires board oversight and direction as the challenges and opportunities involved

are inter-dependent and they also impact on many or most areas of corporate operation. They cannot easily be delegated to a single department, director or function. Nor can they be necessarily resolved by individual organisations acting alone and without the involvement of Governments, regulators and other relevant public bodies.

Responsible Leadership and Programme Management

Understanding the extent to which water, energy, environmental, global warming and other issues are inter-related has become a critical requirement of responsible corporate leaders. Individual projects should no longer be monitored and managed in isolation. Different project teams, some with overlapping memberships, need to learn from and encourage each other, share insights and cross-fertilise. Working and evolving together and in combination can speed up innovation, outcomes and impacts and increase the prospects of compatible and synergistic results. Adaptability and resilience will be required as issues and obstacles are encountered and some areas progress and evolve more rapidly than others.

Effective responses to inter-related challenges require the coordination of multiple work streams and projects that are inter-dependent and use the same resources. Competent and sensitive programme management and related awareness and skills have become a key leadership requirement. Flexible approaches to them are needed as priorities, constraints and risks may continually change in a rapidly evolving context in which individual boards may have little or no control over the actions of Governments and other players. More boards are finding that the direction of a corporate entity needs to be accompanied by leadership of portfolios or sets of inter-connected and inter-related projects that together can achieve multiple outcomes. They may have to adapt, evolve and be steered as situations change.

Boards need to ensure that the silo-like functional structures that still exist in many organisations, and the thinking of the professionals and specialists that accompany them, do not prevent the holistic thinking, connections and collaborations required for effective action and to progress (Capra, 2002). The perspective of directors should embrace the totality of organisations and their network of relationships with stakeholders and both immediate and crisis issues and longer-term aspirations and considerations. Questioning directors and board challenge and leadership have vital roles to play in influencing and shaping whatever 'new normal' emerges from the recession resulting from the COVID-19 pandemic and ensuring that future changes and developments are environment friendly and sustainable.

References

Ahi, Payman and Searcy, Cory (2013), A comparative literature analysis of definitions for green and sustainable supply chain management, *Journal of Cleaner Production*, Vol. 52, pp 329-341

Brown, Adrienne Maree (2017), *Emergent Strategy: Shaping Change, Changing Worlds*, Oakland, CA, AK Press

Capra, Fritjof (2002), *The Hidden Connections*, New York, NY, Doubleday

Carson, Rachel (1962), *Silent Spring*, New York, NY, Houghton Mifflin

Coase, Ronald H. (1960), The Problem of Social Cost, *Journal of Law and Economics*, 3 (October), pp 1-44

Coulson-Thomas, Colin (2014), Listening Leadership, *Effective Executive*, Vol. XVII No. 3, September, pp 11-18

Coulson-Thomas, Colin (2017), Stimulating Creativity, Enabling Innovation and Supporting Entrepreneurship, *Management Services*, Vol. 61 No. 2, Summer, pp 26-29

Coulson-Thomas, Colin (2019), Ancient Wisdom, the Natural World and the Environment, *Abhinava Prabandhan* [International Research Journal of Indian Ethos & Wisdom for Management – 'The Vivek Management'], Vol. 7, Combined Issue I & II, May, pp 1-8

Coulson-Thomas, Colin (2020a), Economic Slowdown: A Business and Social Opportunity for Responsible Leaders, *Effective Executive*, Vol. XXXIII No. 1, pp 7-25

Coulson-Thomas, Colin (2020b), *Board Leadership for Navigating Economic Shocks*, blog.iodglobal.com [http://blog.iodglobal.com/index.php/2020/03/30/board-leadership-for-navigating-economic-shocks/, 30th March]

Dobraszczyk, Paul (2019), *Future Cities, Architecture and Imagination*, London, Reaktion Books

Dorling, Danny (2020), *Slowdown, The End of the Great Acceleration and Why It's Good for the Planet, the Economy, and Our Lives*, New Haven, CT, Yale University Press

Galbraith, John K (1958), *The Affluent Society*, Boston, MA, Houghton, Mifflin Harcourt

Gleick, Peter H (2014), *The World's Water Volume 8: The Biennial Report on Fresh Water Resources*, Washington, DC, Island Press, January

Gleick, Peter H (2018), *The World's Water Volume 9: The Report on Freshwater Resource,* Scotts Valley, CA, CreateSpace Independent Publishing Platform

Govindan, Kannan and Hasanagic, Mia (2018), A systematic review on drivers, barriers, and practices towards circular economy: a supply chain perspective, *International Journal of Production Research*, Vol. 56 Issue 1/2, January, pp 278-311

Hanbury-Tenison, Robin (2020), *Taming the Four Horsemen, Radical Solutions to Defeat Pandemics, War, Famine and the Death of the Planet*, London, Unbound

Handy, Charles (2002), Whats a business for?, *Harvard Business Review*, Big Picture, December [https://hbr.org/2002/12/whats-a-business-for]

Hawken, Paul (Editor) (2017), *Drawdown: The Most Comprehensive Plan Ever Proposed to Reverse Global Warming*, New York, NY, Penguin Books

Kuhn, Thomas S (1962), *The Structure of Scientific Revolutions*, Chicago, University of Chicago Press

Long, Jessica, Lacy, Peter and Spindler, Wesley (2020), *The Circular Economy Handbook, Realizing the Circular Advantage*, London, Palgrave Macmillan

Maitre, Eleanore (Editor) (2018), *Preventing environmental damage from products: an analysis of policy and regulatory framework in Europe*, Cambridge, Cambridge University Press

Marris, Emma (2019), Why young climate activists have captured the world's attention, *Nature*, Vol. **573**, Issue 7775, pp 471-472

McGuire, Chad J (2012), *Environmental Decision-Making in Context, A toolbox*, London, CRC Press

OECD (2011), *Towards Green Growth, A summary for policy makers*, Paris, OECD, May

Paris Agreement (2015) [*Agreement adopted on 12 December 2015 at the twenty-first session of the Conference of the Parties to the United Nations Framework Convention on Climate Change*], United Nations Treaty Collection, Chapter XXVII Environment, New York, NY, United Nations

Perrott, Bruce (2014). The sustainable organisation: blueprint for an integrated model. *Journal of Business Strategy*, Vol. 35 Issue 3, pp.26-37

Ray, Sarah Jaquette (2020), *A Field Guide to Climate Anxiety: How to Keep Your Cool on a Warming Planet*, Berkeley, CA, University of California Press

Roberts, Callum (2019), *Reef Life: An Underwater Memoir*, London, Profile Books

Rowe, Mark (2019), When the wells run dry, *Geographical*, Vol. 91 Issue 3, March, pp 18-27

Rowe, Mark (2020), Waste World, *Geographical*, Vol. 92 Issue 1, January, pp 18-27

Schuelke-Leech, Beth-Anne (2018), A model for understanding the orders of magnitude of disruptive technologies, *Technological Forecasting and Social Change*, Vol. 129 Issue C(Schuelke-Leech, 2018)., pp 261-274

Sen, Sudipta (2019), *Ganges: The Many Pasts of an Indian River*, New Haven, CT, Yale University Press

Sengupta, Somini (2019), Protesting Climate Change, Young People Take to Streets in a Global Strike, *New York Times*, September, 20th [https://www.nytimes.com/2019/09/20/climate/global-climate-strike.html]

Smith, Laurence C (2020), *Rivers of Power, How a Natural Force Raised Kingdoms, Destroyed Civilisations, and Shapes Our World*, London, Allen Lane

Stern, Nicholas (Lord) (2015), *Why Are We Waiting? The logic, Urgency and Promise of Tackling Climate Change*, Cambridge, MA, The MIT Press

Stern, Nicholas (Lord) (2019*), Sustainability and internationalism: driving development in the 21st century*, Policy Insight, London: Grantham Research Institute on Climate Change

and the Environment and Centre for Climate Change Economics and Policy, London School of Economics and Political Science

Thaler, Richard H. and Sunstein, Cass R. (2008), *Nudge, Improving Decisions About Health, Wealth, and Happiness*, London and New Haven, CT, Yale University Press

Treanor, Jill (2020), BP bonuses 'need tougher climate link' & Will BP's new boss promise the earth on climate change, *The Sunday Times*, Business & Money, 2nd February, p 2 & p7

Tucker, Christopher (2019), *A Planet of 3 Billion, Mapping Humanity's Long History of Ecological Destruction and Finding Our Way to a Resilient Future: A Global Citizen's Guide to Saving the Planet,* Alexandra, VA, Atlas Observatory Press

Tybout, Richard A. (1972), Pricing Pollution and Other Negative Externalities, *The Bell Journal of Economics and Management Science,* Vol. 3, No. 1 (Spring), pp. 252-266

UNEP (United Nations Environment Programme) (2019), *Global Environment Outlook* 6, Cambridge, Cambridge University Press

United Nations (2015), *Transforming our world: the 2030 Agenda for Sustainable Development* [Resolution adopted by the General Assembly on 25 September 2015], 70/1, New York, NY, UN General Assembly

UN General Assembly (2010), UN General Assembly resolution 64/292, *The Human Right to Water and Sanitation*, (3 August 2010), New York, United Nations General Assembly

Veblen, Thorstein (1899), The Theory of the Leisure Class: An Economic Study of Institutions, New York, The Macmillan Company

Wallace-Wells, David (2019), *The Uninhabitable Earth: A Story of the Future*, New York, NY, Allen Lane

Warmington-Lundstrom, Jon and Laurenti, Rafael (2020), Reviewing circular economy rebound effects: The case of online peer-to-peer boat sharing, *Resources Conservation & Recycling*, Vol 5, January, 100028 [https://doi.org/10.1016/j.rcrx.2019.100028]

Werner, Beate and Collins, Robert (2012), *Towards efficient use of water resources in Europe* [EEA report no 1/2012, Copenhagen, European Environment Agency (EEA)], Luxembourg, Office for Official Publications of the European Union

Woolf, Greg (2020), *The Life and Death of Ancient Cities*, *A natural history*, Oxford, Oxford University Press

World Bank (2018), *The What a Waste Global Database*, Washington, DC, The World Bank

WRAP (Waste and Resources Action Programme) (2019), *Plastics Market Situation Report*, Banbury, WRAP

Further Information

This article draws upon a theme paper prepared by the author for the 2020 World Congress on Environment Management and Climate Change organised by India's Institute of Directors (http://www.iodglobal.com/) and which was postponed because of the COVID-19 pandemic.

*Author

Prof (Dr) Colin Coulson-Thomas, President of the Institute of Management Services, has helped directors in over 40 countries to improve director, board and corporate performance. He leads the International Governance Initiative of the Order of St Lazarus, is Director-General, IOD India, UK and Europe, Chancellor and a Professorial Fellow at the School for the Creative Arts, an Honorary Professor at the Aston India Foundation for Applied Research, a Distinguished Professor and President of the Council of International Advisors at the Sri Sharada Institute of Indian Management-Research, a Visiting Professor of Direction and Leadership at Lincoln International Business School, and a member of the advisory board of the Aravind Foundation and ACCA's Governance, Risk and Performance Global Forum.

An experienced chairman of award winning companies and vision holder of successful transformation programmes, Colin is the author of over 60 books and reports. He has held public appointments at local, regional and national level and professorial appointments in Europe, North and South America, Africa, the Middle East, India and China. He was educated at the London School of Economics, London Business School, UNISA and the Universities of Aston, Chicago, Southern California and Westminster. He is a fellow of seven chartered bodies and the World Academy of Productivity Science, an honoured fellow of the Institute for Responsible Leadership and obtained first place prizes in the final exams of three professions. He obtained the CSR Lifetime Achievement Award at the 2018 CSR Leadership Summit and the 2019 Global Excellence Award in Renewable Energy of the Energy and Environment Foundation. Details of his most recent books and reports can be found on: http://www.policypublications.com/

Abstract

Directors, boards and business leaders face the challenge of pressure to recover from a widespread and deep recession caused by the impact of COVID-19 and Government and public responses to it without reverting to previous practices that damage the environment, reduce biodiversity and contribute to climate change, and a historic window of opportunity to seize the moment and review, re-purpose, re-boot and transition to more environment friendly, inclusive, responsible and sustainable policies, practices and development models. Board leadership and programme management have vital roles to play in creating the 'new normal' that emerges from the current situation and ensuring future changes and initiatives address inclusion and environmental concerns and longer-term challenges such as climate change. Key skills for directors and corporate leaders include: listening, visioning and communication; identifying relevant sources of objective advice; stakeholder consultation, engagement and involvement; understanding evolving stakeholder aspirations, preferences and priorities; and knowing what questions to ask in relation to: climate change; issue monitoring and management; water and energy security issues; pollution prevention and waste management; the circular economy; collaboration and responding to environmental challenges and opportunities.