

Working Paper

The Next Phase of Business Sustainability

Andrew J. Hoffman
Stephen M. Ross School of Business
University of Michigan

Ross School of Business Working Paper
Working Paper No. 1381
January 2018
Stanford Social Innovation Review, 16(2): 34-39.

This paper can be downloaded without charge from the
Social Sciences Research Network Electronic Paper Collection:
<http://ssrn.com/abstract=3191035>

The Next Phase of Business Sustainability

Andrew J. Hoffman
Stephen M. Ross School of Business
School of Environment & Sustainability
The University of Michigan
701 Tappan Street, R4390
Ann Arbor, Michigan 48109
Phone: 734-763-9455
Email: ajhoff@umich.edu

Please cite as:

Hoffman, A. (2018) “The next phase of business sustainability,” *Stanford Social Innovation Review*, 16(2): 34-39.

The author would like to thank Terry Nelidov and Allison Burtka for helpful feedback on an earlier draft of this article.

The Next Phase of Business Sustainability

The era of corporations integrating sustainable practices is being surpassed by a new age of corporations actively transforming the market to make it more sustainable.

Business sustainability has come a long way. From the dawn of the modern environmental movement and the establishment of environmental regulations in the 1970s, it has now become a strategic concern driven by market forces. Today, more than 90 percent of CEOs state that sustainability is important to their company's profits and success, and companies develop sustainability strategies, market sustainable products and services, create positions such as the chief sustainability officer, and disclose their performance to consumers, investors, activists, and the public at large in sustainability reports.

This trend will not abate anytime soon. Surveys show that 88 percent of business school students think that learning about social and environmental issues in business is a priority, and 67 percent want to incorporate environmental sustainability into whatever job they choose. To meet this demand, the percentage of business schools that require students to take a course dedicated to business and society increased from 34 percent in 2001 to 79 percent in 2011, and specific academic programs on business sustainability can now be found in 46 percent of the top 100 Master of Business Administration (MBA) programs in the United States.

For all this interest, we should expect the world to become more sustainable. But problems such as climate change, water scarcity, species extinction, and many others continue to worsen. Sustainable business is reaching the limits of what it can accomplish in its present form. It is slowing the velocity at which we are approaching a crisis, but we are not changing course. Instead of tinkering around the edges of the market with new products and services, business

must now transform it. That is the focus of the next phase of business sustainability, and we can see signs that it is emerging.

The first phase of business sustainability, what we at the University of Michigan's Erb Institute call **Enterprise Integration**, is founded on a model of business responding to market shifts to increase competitive positioning by integrating sustainability into pre-existing business considerations. By contrast, the next phase of business sustainability, what we call **Market Transformation**, is founded on a model of business transforming the market. Instead of waiting for a market shift to create incentives for sustainable practices, companies are creating those shifts to enable new forms of business sustainability.

Enterprise Integration is geared towards the present-day measures of success; Market Transformation will help companies create tomorrow's measures. The first is focused on "reducing unsustainability"; the second is focused on "creating sustainability."¹ The first attends to symptoms; the second attends to causes. The first focuses primarily inward towards the health and vitality of the organization; the second expands that focus to look outward toward the health and vitality of the market and society in which the organization operates. The first will help future leaders get a job in today's marketplace; the second will help them develop a target for a lifelong career. The first is incremental, the second transformational.

Changing the way we do business is essential to addressing the challenges of environmental degradation. The market is the most powerful institution on earth, and business is the most powerful entity within it. Business transcends national boundaries, and it possesses resources that exceed those of many nation-states. Business is responsible for producing the buildings we live and work in, the food we eat, the clothes we wear, the automobiles we drive, the energy that propels them, and the next form of mobility that will replace them. This does not

mean that only business can generate solutions, but with its unmatched powers of ideation, production, and distribution, business is best positioned to bring the change we need at the scale we need it.

Sustainable Business 1.0: Enterprise Integration

In its first incarnation, business sustainability represents a market shift. Market pressures bring sustainability to business attention through core management channels and functions. This began with Nixon-era government regulation and grew to include insurance companies, investors, consumers, suppliers, buyers, and others through the 1980s and 1990s.² Such market pressures can emerge from numerous sources: coercive drivers—from domestic and international regulations and the courts; resource drivers—from suppliers, buyers, shareholders, investors, banks, and insurance companies; market drivers—from consumers, trade associations, competitors, and consultants; and social drivers—from nonprofit organizations, activist groups, the press, religious institutions, and academia.³

While corporate social responsibility (CSR) is one response to such pressures, companies have sought to improve competitive positioning by linking sustainability and corporate strategy. This involves translating the issue into the core language of business management: operational efficiency, capital acquisition, strategic direction, and market growth. In each case, the firm has an established model that it can use to conceptualize the issue and formulate a response. In this way, sustainability becomes much like any other business threat, where market expectations change and technological developments advance, leaving certain industries to adapt or face demise while others rise to fill their place.

For example, when insurance companies apply sustainability pressures on the firm, the issue becomes one of risk management. When competitors apply such pressures, it becomes an issue of strategic direction. When investors and banks, it becomes an issue of capital acquisition and cost of capital. When suppliers and buyers, it becomes an issue of supply-chain logistics. When consumers, it becomes an issue of market demand. When framed in such terms, much of the specific language of sustainability recedes and is replaced by standard business logic. As such, companies can remain agnostic about the science of particular issues (such as climate change) but still recognize their importance as business concerns. The successful company can perform this translation process and integrate sustainability into its existing structures and strategies.

Take Whirlpool: It has improved appliance energy efficiency because it has watched energy efficiency move from number 12 in consumer priorities in the 1980s to number three, just behind cost and performance, today. Whirlpool and others expect those concerns to continue to grow.⁴ One signal of this growth is the LOHAS consumers (Lifestyles of Health and Sustainability), a segment that considers environmental attributes in purchasing decisions and that was estimated to be a \$355 billion market in the United States in 2016 and a \$546 billion market worldwide. Another signal comes from impact investors, who consider environmental, social, and governance (ESG) factors in their investment criteria. The sector reached \$8.72 trillion of professionally managed assets in the United States in 2016, or one-fifth of all investment under professional management. But it is not just a specialized sector; this past May, financial advisory firms BlackRock, Vanguard, and State Street cast votes in opposition to Exxon management and called for the company to disclose its climate change impacts.

These are all signs that the market has and continues to shift. Today, consumers can buy sustainable products, stay in sustainable hotels, eat sustainable foods, and use sustainable cleaning products. While this “greening” of the market is a good thing, it is not actually solving the root problems it was meant to address. Our world continues to become less, not more, sustainable.

Sustainable Business 2.0: Market Transformation

While business sustainability has been going mainstream, the world has witnessed unprecedented human impacts on the natural environment, an impact that threatens the viability of life on Earth. To mark this shift, scientists have proposed that we have left the Holocene and are now entering the Anthropocene, a new geologic epoch that acknowledges the enormous influence of the world’s 7.5 billion people (to be nearly 10 billion by 2050) on the planet.⁵

To measure that influence, they have identified nine “planetary boundaries” that represent “thresholds below which humanity can safely operate and beyond which the stability of planetary-scale systems cannot be relied upon.”⁶ (See “Planetary Boundaries” on page TK.) These are what management professor Gail Whiteman has called the “key performance indicators” (KPIs) of the planet, many of which are not doing so well. While one (ozone depletion) is on the mend, scientists believe we have overshot the boundaries of three: climate change, biodiversity loss, and the nitrogen cycle. Further indicators are also blinking red, such as ocean acidification, water scarcity, land-use change, chemical pollutants, and species extinction. All of these disruptions are the result of system failures created largely by our market institutions. They will have to be remedied by those institutions.

Fortunately, capitalism can be quite malleable. It is designed by human beings in the service of human beings, and it can evolve to meet the changing needs of human beings. This has happened through its history to address issues such as monopoly power, collusion, and price-fixing. Today's pressing need is sustainability—particularly to address climate change—and legislators are not the only ones who can shift course. Many companies recognize this challenge and are pushing for new market models. In the words of Unilever CEO Paul Polman, “We are entering a very interesting period of history where the responsible business world is running ahead of the politicians” and taking on a broader role to “serve society.” That new role leads us to a new model of business sustainability.

The next phase of business sustainability calls for a transformation of the market, discarding such outdated notions as treating the environment as a limitless source of materials and sink for waste, seeing economic value as the only measure of nature's worth, encouraging unbridled consumption, and considering perpetual economic growth as even possible. Corporate decision-makers have a key role to play in facilitating this transition. Instead of accepting the rules of the market as given, they must change them to incorporate the planet's KPIs. For example, to turn around the KPI of climate change, the market must go carbon neutral, and eventually go carbon negative. We don't yet know how to do that, but we know that it cannot be done by one company or one product. It requires a change in the overall market.

Real sustainability is a property of a system.⁷ For example, the notion of an energy company installing a windfarm and calling itself sustainable makes no empirical sense. A more sustainable energy system incorporates the whole grid, encompassing generation, transmission, distribution, use, and mobility. We can already see signals of this change happening as new energy sources, distributed energy, demand-side management, smart appliances, and smart

meters are beginning to transform our conceptions of energy. Already, jobs in the clean energy sector have exceeded those in oil drilling.

But the energy renaissance goes further. Electric vehicles have the potential to change the grid, leveling the electricity demand curve by charging at night and providing storage capacity during the day for intermittent energy sources like wind and solar. Already, a Nissan Leaf owner in Japan can buy a transformer to power the house off the battery pack during a power failure. Research is under way to scale this concept and allow consumers to rent their batteries to utilities while their car is parked. Electric vehicles are also transforming the auto industry. Who could have predicted 20 years ago that new entrants like Tesla would enjoy a larger market capitalization than General Motors?

And as the shift to driverless cars continues, IT companies such as Apple and Google have entered the fray, shifting success factors in the auto sector from hardware to software and with them, our conceptions of personal mobility. For example, Ford is looking to become a mobility provider, operating like the airline industry where profits increase when their cars spend minimal time idling. Given that today's personal car is parked 95 percent of the time, driverless cars can result in fewer cars on the road (at least in urban centers) as people purchase mobility services rather than own cars. Fewer cars on the road means repurposing unneeded roads, parking lots, garages, and service stations.

Systemic Corporate Strategies

As we see with the energy and transportation sectors, the potential scope of market transformation is vast. To help flesh this out, we can conceive this sustainability revolution as proceeding from two initial phases. First, corporations rethink their business strategies to play a

stronger role in guiding the sustainability of the systems of which they are a part. Second, the business model itself is undergoing reconceptualization. The first phase includes at least four new ways of conceiving their approach to operations, partnerships, government engagement, and transparency.

New conceptions of operations: Market Transformation calls for optimizing supply-chain logistics to reduce risks from numerous factors such as: disruptions due to increased storm severity caused by climate change; current and future resource availability and price volatility; accelerating emissions and concerns for public health and the environment; and the future resilience of business and civil society. These risks can directly affect assets and operations, availability and costs of inputs, regulation of sourcing and distribution, workforce availability and productivity, and stakeholder reputation. For instance, Nestlé, Coca-Cola, Cargill, and General Mills have all faced threats to supply chains due to the decreased availability of water, a once plentiful resource now scarcer because of climate change and over-consumption.

To better manage such operational systems, companies are moving away from linear models in which items are created, used, and disposed of once they reach their end of serviceable life, and toward circular models, where items are created, used, and then either restored or reprocessed to recover energy or materials that can be used again. One key to this new vision of a circular economy is that it is regenerative by design; it is organized to keep products, components, and materials at their highest utility and value at all times.

For example, industrial and consumer products company Ricoh has concluded that, by 2050, there will be an insufficient supply of many reasonably priced raw materials to support its manufacturing needs. As a result, the company is revising its business model using life-cycle analysis as the basis for decision-making and establishing a series of “Resource Smart Solutions”

for product design and manufacturing, reuse, collection, maintenance, and materials recovery. To change the system around it, the company is also helping its customers reduce energy use, carbon footprint, and virgin material use while also expanding its own opportunities for product refurbishing, recycling, and new designs. Targets include reducing virgin resource use by 25 percent by 2020 and 87.5 percent by 2050. In adopting circular economy thinking, Ricoh is striving to move beyond incremental efficiency goals to more ambitious “net zero impact” business operations.⁸

New conceptions of partnerships: Going beyond the supply chain, companies also look to novel partnerships outside standard modes of shifting the market, including non-profit organizations, the government, competitors, and seemingly unrelated companies.

For example, as the Ford Motor Company increased its research and development in hybrid and electric drivetrains, it saw an opportunity in how customers would live more electrified lifestyles overall. Together with Infineon, SunPower, Whirlpool, and Eaton, Ford developed the MyEnergi Lifestyle program, exploring ways in which hybrid electric vehicles, solar power systems, energy-efficient appliances, and home design can be integrated to reduce the total carbon footprint. Similarly, Toyota is seeking a broad array of partnerships to achieve its goal of going “beyond zero environmental impact” by eventually eliminating CO₂ emissions from vehicle operation, manufacturing, materials production, and energy sources by 2050. Only through such systemic leadership can any company transform its market to make such a goal achievable.

New conceptions of government engagement: Very few business schools offer courses on collaborative and constructive lobbying. Indeed, the public perceptions of lobbying are generally negative. But lobbying is basic to democratic politics as government seek guidance on

how to set the rules of the market and ushers reforms as needed. Forward-thinking companies are looking for ways to participate constructively in policy formation.

For example, Intel was instrumental in calling attention to the horrors of tin, tantalum, tungsten, and gold mining in the Democratic Republic of Congo. While the company could have simply stopped sourcing such “conflict minerals” from the region, it did not want to create additional hardship for legal mining operations. Instead, it helped create provisions in the Dodd-Frank Act that require the tracking and disclosure of such mineral sourcing within the broader electronics industry.

This is not unusual. Companies are also working with governments to phase out heat-trapping HFC chemicals and setting new efficiency standards on trucks. The Paris Agreement on climate change would not have been possible without the powerful business interests that helped broker a deal. In each of these examples, business had assumed a responsible position in bringing about a sustainable shift in the market through policy.

New conceptions of transparency: The only way that Market Transformation will be successful is through trust, and trust can be gained only through greater transparency. The expansion of corporate influence in society, particularly as it relates to government, will make some justifiably uneasy. But robust reporting mechanisms can help allay those fears and also help protect companies from the effects of misconduct, including legal liability and penalties. To be sure, companies are already disclosing numerous sustainability indicators through established standards, such as the globally recognized Global Reporting Initiative or Carbon Disclosure Project. But transparency goes further as companies face increasing demands for data, both for internal management and external validation, under the watchful eye of activists, investors,

suppliers, buyers, employees, and customers. The gathering and dissemination of such information can open up new awareness of supply-chain risks and opportunities.

For example, IBM and partner companies are experimenting with blockchain technology to transform visibility and traceability in complex, often opaque, global supply chains. In 2017, IBM piloted supply-chain blockchain with Walmart to address food safety in its global supply and distribution network and plans to roll it out further with nine global agricultural companies. In another example, Nestlé conducted an internal investigation of its Thai fish supply chains in 2014 and found forced labor and brutal treatment of workers. But in a dramatic shift from standard practices of privacy and non-disclosure, the company posted the report online, imposed new requirements on suppliers, and commissioned outside auditors to assure compliance. This public disclosure compelled other companies that source fish in Thailand to follow suit, shifting the competitive dynamics of supply-chain logistics. Similarly, Intel disclosed its sourcing of conflict minerals from the DRC even after a lawsuit by the National Association of Manufacturers (of which it is a part) forced a rollback in the Dodd-Frank disclosure standards.

New Ways of Doing Business

Market Transformation not only compels more systemic businesses strategies, but it also challenges traditional ways of conceiving business itself. It demands new conceptions of corporate purpose, notions of consumption, and models and metrics of business success.

New conceptions of the corporation's purpose: The dominant idea of the purpose of the corporation as simply to “make money for its shareholders” took hold within business in the 1970s and 1980s. But the narrow pursuit of shareholder value leads to excessively short time horizons for investment planning and measures of success. It also leads to a focus on only the

type of shareholder who is less interested in sustainability efforts and, in the words of law professor Lynn Stout, is “shortsighted, opportunistic, willing to impose external costs, and indifferent to ethics and others’ welfare.”⁹

Instead, a more accurate depiction of corporate purpose was presented by management pioneer Peter Drucker: “The purpose of a company is to create a customer” where a successful business “is defined by the want the customer satisfies when he or she buys a product or a service. To satisfy the customer is the mission and purpose of every business.” This idea is beginning to grow within business practice and education.

For example, Benefit Corporations are one type of innovation that seeks to integrate a broader array of objectives than simply profits into its forms of organizing, governance, and legal statement of purpose. And other companies are watching closely, sometime mimicking them. This trend has caught on among MBA students who challenge conventional thinking around capitalism and corporate purpose. At the Harvard Business School, an immensely popular course called “Reexamining Capitalism” explores “the evolution, power, and limitations of our current capitalist systems” and “how the ‘rules of the game’ by which capitalism is structured should change” to address the social and environmental issues of our day.

New conceptions of consumption: Is “sustainable consumption” an oxymoron? The World Business Council for Sustainable Development doesn’t think so, warning that “consumption as usual represents a threat, both locally and globally, to the natural resources on which we depend,” and calls on businesses to “abandon the existing consumption paradigm” and move towards “transformations in mainstream lifestyles and consumption patterns.”¹⁰ Several businesses and activists have sought to put such an idea into practical use.

For example, Patagonia, through its Common Threads initiative, encourages people to buy used Patagonia products on eBay before going to the store to buy them new. Adbusters has long promoted its “Buy Nothing Day,” what it calls a “24-hour moratorium on consumer spending” as a counterpoint to the Black Friday spending spree that traditionally follows the holiday of Thanksgiving. The outdoor lifestyle retailer and co-op REI closes its 149 stores on Black Friday as part of its “#OptOutside” program. In 2016, Subaru, Google, Meetup, Upworthy, and competing outdoor brands such as Burton, Keen, Yeti, and Prana chose to partner with the effort. In the end, resource use must be reduced at the source, and that means developing new models of consumption.

New conceptions of business models and metrics: Market Transformation requires a compelling new business model to replace traditional ones that dominate business thinking. For example, neoclassical economics and agency theory employ dismally simplified models of human beings as driven primarily by selfishness, where those running the company (agents) will shirk or even steal from the owner (principal) if they do the work and the owner gets the profits. But behavioral economists have argued that real humans don’t behave as neo-classical economics suggest we do, and legal scholars argue that managerial motivations are far more complex than a simple principal/agent relationship and instead involve thousands of shareholders, executives, and directors with more socially positive motivations. And new models have arisen, such as Positive Organizational Scholarship and Appreciative Inquiry, that move beyond standard cynical conceptions of human behavior to understand how and why people are motivated to devote their work towards improving the world around them and how to create the organizational conditions that will foster that activity. These models are gaining increasing

interest in business teaching, research, and practice as a way to create a more committed and effective organization.

Other models are also beginning to gain recognition. Donut Economics¹¹ is a model of economic growth that links social justice to efforts to stay within the planetary boundaries of the Anthropocene. Shared Value is aimed at redefining capitalism by arguing that the competitiveness of a company is closely tied to the health of the communities in which it is embedded.¹² Conscious Capitalism is a model of business that serves the interests of all major stakeholders—customers, employees, investors, communities, suppliers, and the environment. And Regenerative Capitalism reimagines capitalism in terms that are self-organizing, naturally self-maintaining, and highly adaptive to produce lasting social and economic vitality for global civilization as a whole. Each of these models is seeking an amended form of capitalism that is sensitive to the constraints of the Anthropocene.

Closely related to models of business behavior are the metrics used to define success, many of which lead to unsustainable outcomes. For example, discount rates are used to capture the time value of money; the fact that a dollar today is worth more than a dollar tomorrow. But a common discount rate of 5 percent leads to a conclusion that everything 20 years out and beyond is worthless. When gauging the response to climate change, is that an outcome that anyone—particularly anyone with children or grandchildren—would consider ethical? Economist Nicholas Stern¹³ answered no with an argument that used an unusually low discount rate when calculating the future costs and benefits of climate change mitigation and adaptation.

Another problematic metric is gross domestic product (GDP). This measure of national economic health fails to value a distinction between financial transactions that add to the well-being of a country and those that diminish it. Any activity in which money changes hands will

register as GDP growth, even money spent on recovery from natural disasters and pollution cleanup. To examine alternatives, French ex-president Nicolas Sarkozy created a commission, headed by Nobel laureates Joseph Stiglitz and Amartya Sen. Their 2010 report recommended a shift in economic emphasis from the production of goods to a broader measure of overall well-being that would include measures for categories such as health, education, security, and sustainability.¹⁴

Reshaping Politics to Reshape the Market

A discussion of Market Transformation and the corporation's shifting role in society cannot be complete without a discussion of the current political and social climate and what impact it has on this agenda going forward. The Trump administration denies the science of climate change and has embarked on an agenda of loosening the regulatory environment to stimulate economic growth. This is a similar script to that employed by President Ronald Reagan more than 35 years ago when he appointed Ann Gorsuch Burford to lead the Environmental Protection Agency, James Watt to head the Department of the Interior, and Rita Lavelle to run Superfund, the program for cleaning up the country's most polluted sites. These hires set about slowing or stopping environmental enforcement but ultimately led to scandals and created a critical public backlash: Congress went on to strengthen numerous environmental regulations, and environmental groups increased membership and budgets. In the words of former Sierra Club Executive Director Carl Pope, President Reagan "reinvented the environmental movement by his contempt for it."

So, while President Trump's approach to the environment bears similarities to President Reagan's attempts to roll back environmental regulations, and likely faces a similar backlash,

there are several key differences. First, some of the backlash this time will come from businesses that are leading on greenhouse gas reductions and not fighting government-led environmental policies, as they did in the 1980s. Indeed, recent surveys show that 85 percent of business executives believe that climate change is real (well above the national average of 64 percent), and many see the associated market risks and benefits. General Mills CEO Ken Powell was not alone when he told the Associated Press: “We think that human-caused greenhouse gas causes climate change and climate volatility and that’s going to stress the agricultural supply chain.” Cargill Executive Director Greg Page warns of food shortages if we do not act. Such concerns represent a strong and growing perspective within the corporate sector that we have a problem and government inaction will only make it worse.

While those who lose in a carbon-constrained world (such as fossil fuel interests) will continue to resist acknowledging climate change, most companies see the long-term trajectory of this issue and do not see the current administration’s position as the long-term future. The market is shifting with or without the US government, as other national governments as well as many US state and city governments continue to set policies. Many companies are part of global markets and see the US withdrawal from the Paris Agreement as ceding US leadership, but not stopping the market transformation that is underway. Some markets may slow, but some may just move to other parts of the globe, such as Germany, India, and China, where heavy investments in renewable energy and alternative drive trains are viewed as the future of the energy and mobility sectors.

The public is also moving in favor of sustainability. Already, public opinion polls show an increasing number of Americans believe that climate change is real. Some even show that a majority of Republicans—including 54 percent of self-described conservative Republicans—

now believe that the world's climate is changing and that mankind plays some role in the change. This is a marked shift from 2009, when just 35 percent of Republicans believed that climate change was real. The truth is that many Republican politicians, congressional aides, lobbyists, and staff believe in the science of climate change as well but are waiting for the right political cover to voice their views.

Concern for the environment is a long-term interest of the American public, one that is more latent than urgent and top of mind. While surveys show that it ranks low on election issue topics—number 12 in one poll, behind the economy, terrorism, foreign policy, and health care—it is also driven by saliency, and it will awaken when threatened. That awakening can be triggered by any number of levers. California Governor Jerry Brown warned that if the United States does not develop the next generation of electric cars that met the state's rigorous standards, China will. A group of retired military officers call climate change as a “threat multiplier” and a “catalyst for conflict” that will threaten our national security. The Lancet Commissions dedicated to global health pronounced climate change to be “the biggest global threat of the 21st century.” And Pope Francis called on all religious people to care for the environment as a matter of religious morality. If history is any indication, smart business leadership will read these signs, anticipate the market shift and seek to take advantage.

Andrew J. Hoffman is the Holcim (US) Professor of Sustainable Enterprise at the University of Michigan. He is also a faculty affiliate and past director of the University of Michigan's Erb Institute for Global Sustainable Enterprise.

Figure 1: Planetary Boundaries

Planetary Boundaries

after Johan Rockström, Stockholm Resilience Centre et al. 2009

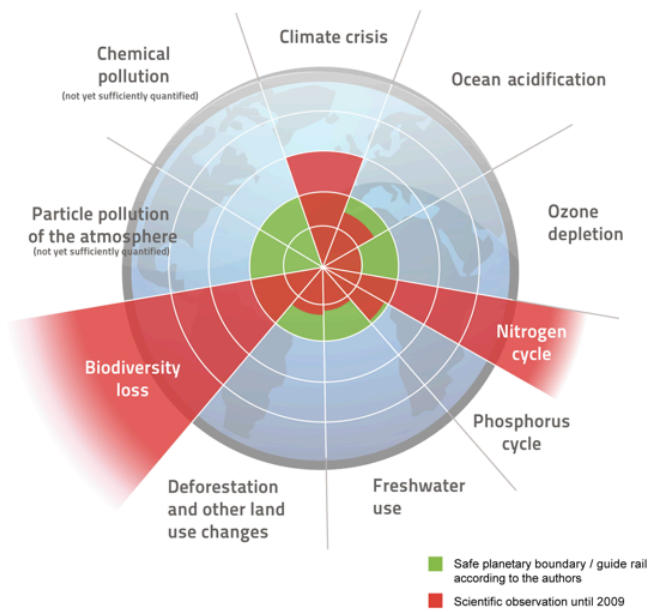


Illustration: Felix Müller (www.zukunft-selberrmachen.de) Licence: CC-BY-SA 4.0

Rockström, J. et al (2009). "Planetary boundaries: Exploring the safe operating space for humanity." *Ecology and Society*, 14(2): 32

Endnotes

- ¹ J. Ehrenfeld, *Sustainability by Design*, New Haven: Yale University Press, 2009.
- ² A. Hoffman, *From Heresy to Dogma: An Institutional History of Corporate Environmentalism*, Stanford, CA: Stanford University Press, 2001.
- ³ A. Hoffman, *Competitive Environmental Strategy: A Guide to the Changing Business Landscape*, Washington DC: Island Press, 2000.
- ⁴ A. Hoffman, *Getting Ahead of the Curve: Corporate Strategies that Address Climate Change*, Arlington, VA: The Pew Center on Global Climate Change, 2006.
- ⁵ P. Crutzen, “Geology of mankind,” *Nature*, Vol. 415: No. 23, 2002.
- ⁶ J. Rockström, *et al.* “Planetary boundaries: Guiding human development on a changing planet,” *Science*, Vol. No. 6223, 2015.
- ⁷ J. Ehrenfeld and A. Hoffman, *Flourishing: A Frank Conversation about Sustainability*, Stanford: Stanford University Press, 2013.
- ⁸ T. Yosie, “Moving the circular economy from concept to business strategy and operations,” The Conference Board, September 25, 2017.
- ⁹ L. Stoudt, “The problem of corporate purpose,” Washington, DC: Brookings Institution, 2012.
- ¹⁰ WBCSD, *A Vision for Sustainable Consumption*, Geneva, Switzerland: World Business Council for Sustainable Development, 2011.
- ¹¹ K. Raworth, *Doughnut Economics: Seven Ways to Think Like a 21st-Century Economist*, Chelsea, VT: Chelsea Green Publishing, 2017.
- ¹² M. Porter and M. Kramer, “Creating shared value,” *Harvard Business Review*, January-February, 2011.
- ¹³ N. Stern, *The Economics of Climate Change: The Stern Review*, Cambridge, UK: Cambridge University Press, 2007.
- ¹⁴ J. Stiglitz, A. Sen, and J.P. Fitoussi, *Mismeasuring Our Lives: Why GDP Doesn’t Add Up*, New York: The New Press, 2010.