

CORPORATE SOCIAL RESPONSIBILITY

Measuring and Disclosing Corporate Valuations of Impacts and Dependencies on Nature

by Jakki J. Mohr and Carmen Thissen

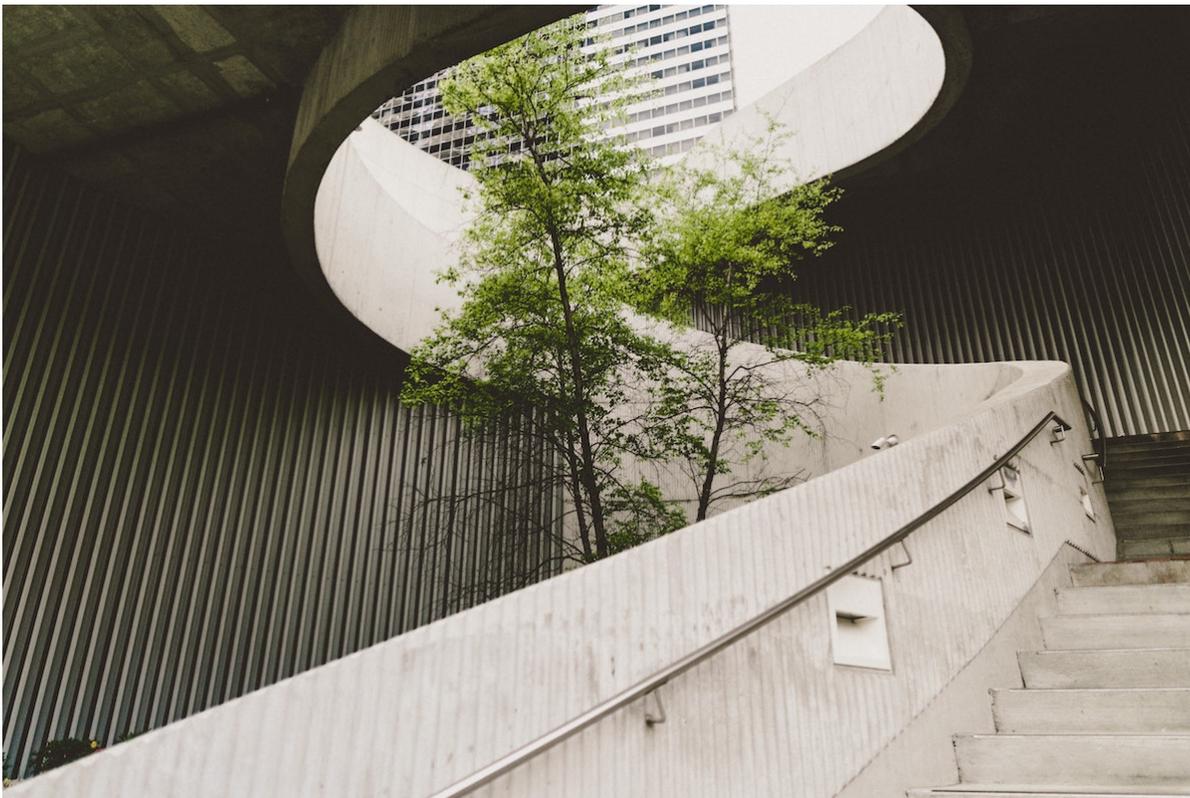


Image Credit | Alexander Abero

Calibrating environmental impacts in financial terms provides novel insights.

✔ **INSIGHT** | FRONTIER 12 Dec 2022

Nature provides important resources upon which business depends, yet increasingly, businesses face risk and vulnerability from the destruction and depletion of natural resources, climate change, and loss of biodiversity. In fact, more than half of global GDP, or roughly US\$44 trillion, is “moderately or highly dependent on nature and its services, and therefore exposed to risks from nature loss.”¹ A new cadre of business leaders is using *natural capital accounting* to transparently quantify and disclose their companies’ impacts and dependencies on nature in monetary (e.g., financial) terms.

RELATED CMR ARTICLES

“Measuring and Disclosing Corporate Valuations of Impacts and Dependencies on Nature” by Jakki Mohr & Carmen Thissen. (Vol. 65/1) 2022.

“Materiality Assessment Is an Art, Not a Science: Selecting ESG Topics for Sustainability Reports” by Jilde Garst, Karen Maas, & Jeroen Suijs. (Vol. 65/1) 2022.

What is Natural Capital and Natural Capital Accounting?

The phrase “natural capital” refers to the tangible natural resources upon which businesses rely (timber, mineral deposits) and the intangible “ecosystem services” that nature provides (such as absorption of rain waters by soil, storage of carbon in forests, and crop pollination by insects).

Unlike sustainability reporting, which documents a company’s social and environmental impacts generally (metric tons of greenhouse gas emissions, amount of water utilization, waste generated), natural capital valuations calibrate environmental impacts and dependencies in monetary terms. As a result, natural capital assessments enable new insights. For example, rather than attempting to reduce all negative environmental

impacts (say, to lessen carbon emissions), natural capital assessments allow companies to discover which of these impacts and dependencies have the most financial impact, and therefore, to re-direct their strategies to yield the greatest benefit.

Natural capital valuations allow for easier engagement of top management than other sustainability metrics (say, tons of greenhouse gas emissions or gallons of water usage). For example, an environmental factor whose impact and influence might be ten times greater than another factor can be put at higher priority for risk management practices. Putting everything into a single language by translating the impacts of each in financial terms makes it easier for busy executives and decision makers to pick the right course of action.

Perhaps the most widely used and well-known approach to conducting natural capital assessments is the Natural Capital Protocol, developed by the Natural Capital Coalition (now known as the Capitals Coalition) in conjunction with more than 50 companies. The Natural Capital Protocol provides “an internationally standardized framework for the identification, measurement, and valuation of impacts and dependencies on natural capital in order to inform organizational decisions.”² Its nine steps guide a company through understanding why it would undertake a natural capital assessment, defining objectives for the assessment, scoping the assessment, identifying which impacts and dependencies are most critical, measuring and monetizing (e.g., assigning valuation coefficients) those impacts and dependencies, interpreting the results, and applying the results into existing business decisions and processes.

Three companies leading the way in natural capital accounting are Nestlé, Danone, and Kering.

- Nestlé’s natural capital valuations led it to pay a premium to UK dairy farmers who plant hedgerows and install fencing on watercourses, to mitigate soil erosion and species decline. Research lead Mark Reed states: “The project signifies a change in tone of debate around natural capital ... [which has] remained stuck for some time as a form of corporate social responsibility. Only when companies begin to see how important [it is] for increasing resilience against future shocks will it become possible to make the business case for investment in natural capital.”³

- Danone reported its 2019 earnings per share (EPS) adjusted for the cost of carbon emissions throughout its value chain: its EPS of €3.85 (\$4.18) in 2019 fell to €2.39 when the cost of emissions was deducted (“carbon-adjusted EPS”). Its goal in EPS-adjusted reporting is to “bring the climate change debate to the heart of its financial activities” and to help investors understand climate-change risks. To ensure its “carbon-adjusted” EPS grows faster than its recurring EPS, Danone is undertaking ambitious efforts to mitigate its carbon impacts.⁴
- Kering Group (parent company of Gucci, Puma, and a host of other brands) discloses natural capital impacts and dependencies through its “Environmental Profit and Loss” (EP&L) statements. Kering produced its first EP&L account in 2012, and since then has broadened the scope of its assessments, improved analysis through technical advances, and made the methodology open-source.⁵

Concerns about Natural Capital Assessments—and the Way Forward

Robust and transparent natural capital assessments are not yet mainstream. For example, some companies are hesitant to measure and disclose what currently are treated as externalities or “free” services provided by nature, such as crop pollination by insects. Other companies worry about the possibility of negative backlash. At the extreme, monetized environmental impacts and dependencies might exceed a firm’s financial profitability. Others wonder why they should conduct a natural capital assessment if it’s not required.

Advocates argue that disclosing an even imperfect “price” on nature is perhaps preferred to regarding the natural world and the services it provides as valueless. In other words, it is nature’s inherent “economic invisibility” that has led to its ongoing degradation.⁶ Hence, making environmental impacts transparent is a way to reverse environmental decline.

Moreover, there are new forces pushing businesses to be more transparent about their impacts and dependencies on nature. First is the increasing call for companies to report on environmental, social, and governance issues (known as ESG reporting).⁷ In the United

States, the Securities and Exchange Commission (SEC) has proposed amendments to require more consistent and reliable data on ESG factors. Second is the heightened concern around natural disasters and their impacts on business: five of the top ten risks to the global economy are related to the natural environment: climate action failure, biodiversity loss, extreme weather, natural disasters, and human-made environmental disasters.

Ultimately, assessing and disclosing companies' impacts and dependencies is a step towards the fundamental transformation of business. Christian Heller, former vice president at BASF and current CEO of the Value Balancing Alliance states this as an existential crisis:

“If we keep our consumption patterns and business models running as of today, it's just a matter of time until we have destroyed the planet, and that means until we have destroyed society, and that means until we have destroyed business.”

The need for business to make significant changes to ensure their long-term survival is part of the logic for pushing forward with natural capital accounting, despite concerns about possible backlash.

Best Practices in Natural Capital Valuations

Our recent article in *California Management Review* reports results from a study of companies leading the way with natural capital valuations.⁸ Some of the findings from that study related to motivations for undertaking a natural capital assessment, decisions about the actual valuation process itself (e.g., where to house it, what methodology to use, how to collect the data, and importantly, how to assign valuation coefficient to compute the monetary valuation); and how companies utilize the valuations in their decision-making processes.

Motivations. Some of the reasons companies undertake valuations of natural capital—such as risk management, cost savings, and marketplace responsiveness—are consistent with well-known motivations for sustainability initiatives generally. In addition, a key

motivation to conduct natural capital assessments specifically is to compute environmental impacts and dependencies in the same metric as other business decisions (e.g., financial metrics).

For example, the global environmental manager of an industrial textiles company says, “if our environmental impact, our potential for damage to natural capital is forty million dollars a year, [this assessment] places environmental impacts on a level playing field [with other decisions].”

In addition, providing a monetary value of natural capital makes it much easier to discuss the costs and impacts of various strategies. For example, rather than build a \$40 million water treatment plant, Dow spent \$1.4 million on their Texas “Seadrift” project to create a 110-acre wetland to purify water.⁹

Natural capital valuations also allow for easier engagement of top management than other sustainability metrics (say, tons of greenhouse gas emissions or gallons of water usage). The head of relationships at an NGO states: “communicating sustainability in an economic way makes it harder and harder for senior management to ignore it.”

Challenges in Conducting the Assessment. Companies face a variety of data collection and valuation challenges, including methodological complexities, the effort involved in data collection, and the lack of clarity in determining valuation coefficients. A first consideration is organizational structure: where the valuation initiative will be housed.

If a company intends to integrate the natural capital valuation into core decisions and strategies, then our findings suggest that housing the valuation effort in only corporate social responsibility or communications/public-relations departments does not yield optimal outcomes. For example, Christian Heller cautions:

“If you keep this [natural capital valuation] as a standalone, or as communication exercise, it will never make its way into decision making and steer the company.”

Indeed, respondents viewed housing natural capital valuations in communications departments with skepticism. A respondent from an NGO explained that a particular food and beverage company “wasn’t going to make different decisions because they had that

valuation information,” but instead were interested in the “short term communications, or the sizzle.”

To gain greater traction, companies should embed natural capital valuations into core decision-making functions such as finance, procurement, and corporate strategy. Despite being described as a difficult department to engage around natural capital valuation efforts, finance departments often yield the greatest rewards, as they are instrumental in making the resource allocation decisions.

A second consideration is the sheer effort involved in collecting the data—a well-recognized challenge not just for natural capital valuations but for sustainability reporting generally. The managing director of a financial services company addresses this challenge matter-of-factly, explaining that “there’s never enough data;” rather, the real challenge is determining how precise, accurate, and robust the data need to be “to rely on to make a business decision.” Identifying where natural capital valuations are likely to yield new insights is critical. If the valuation process is likely to merely reinforce or confirm insights the company has already—say, knowing carbon impacts—then attempting to compute a financial measure of those impacts might not be worthwhile. Materiality screens for natural capital¹⁰ can identify which impacts and dependencies are both fundamental to business longevity as well as which are critically important to stakeholders. The Natural Capital Protocol offers guidance on materiality screens for natural capital assessments, noting that potential materiality criteria can include operational, legal/regulatory, financing, reputational/marketing, and societal criteria.

A third consideration is assigning valuation coefficients that quantify how much one unit of a given impact or dependency “costs” in monetary terms. The senior sustainability director of a food/agribusiness company explains, “Developing these coefficients is a contentious exercise; it’s the valuation that is difficult to figure out.”

In the case of carbon, valuation coefficients are fairly well-developed; the World Bank and others help price carbon as a way to scale up greenhouse gas mitigation efforts. However, figuring out how much a liter of clean water is worth depends on many local considerations, including drought/precipitation patterns, water pollution, water access, and so on.

Despite these challenges in the assessment process, our respondents don't let imperfect processes or valuations stop them from acting. The sustainability director of a luxury conglomerate expresses that "we don't know how accurate our measure [of the financial value of natural capital] is. In fact, we know it's going to be pretty inaccurate. But it's the best measure we have." This idea of "don't let perfect be the enemy of the good" is a common mantra.

Using the Valuation to Guide Decision Making. Because they use a common quantitative financial metric, natural capital assessments help companies prioritize. A senior sustainability director of a cosmetics company explains: "when we do these kinds of valuations of externalities, you're going to prioritize your agenda on the ones that have higher negative impact." This means, for example, that an environmental factor whose impact and influence might be ten times greater than another factor can be put at higher priority for risk management practices. Putting everything into a single language by translating the impacts of each in financial terms makes it easier for busy executives and decision makers to pick the right course of action.

Similarly, the sustainability head for North America for the multinational conglomerate uses natural capital valuations to disclose areas of critical impacts and dependencies. "[A] natural capital assessment reinforces or discovers hotspots that we didn't know existed for this specific business decision." She cites an example of how her company's previous reliance on Life Cycle Analysis data wasn't sufficient to address nuances related to water. In an LCA, a liter of water is the same no matter where it came from. However:

"When you monetize that based on where [our impact or dependency] is happening, we found that a liter of water is very different in [location X] than in [location Y]. And so we were able to understand a new dimension of environmental impact that we hadn't considered before. I mean, it seems obvious with water, because some regions are more water-stressed than others. But it's not necessarily where your [manufacturing] plant is; it has a lot to do with your supply chain as well."

She concludes: "It gave us a whole new insight into the regional differences in environmental impacts, along with helping focus our efforts on the most important environmental impacts."

Companies also use natural capital valuations for scenario planning and “what if” assessments. “What you can easily do with these kinds of valuation methods is to make scenarios, [to] compare future options. What would happen if a company replaces oil and gas as key raw materials with renewables? What would happen if it builds a new site in China compared to Brazil, for example? This methodology easily runs these scenarios,” says Christian Heller, former VP at BASF.

Conclusion

“There’s a lot of natural value that we are not accounting for, which is why we’re continuing as a world to abuse our natural resources and not view them as true assets.”

— Head of North American Sustainability, multinational conglomerate

The lack of monetary valuations of a firm’s impacts and dependencies on nature has created a situation where nature’s resources have been assumed to be “free,” contributing to their abuse and overuse. Although some companies have been conducting natural capital valuations and disclosures for at least a decade or more—and despite the urgency of valuing impacts and dependencies on nature—it is not common practice.

Ultimately, like tackling other organizational change initiatives, learning to account for impacts and dependencies on nature requires courage and stamina. The value of learning from the process of conducting the natural capital assessments offers perhaps as much value as the outcome itself.¹¹ Natural capital valuations allow companies to reprioritize their strategies around environmental impacts and vulnerabilities. In contrast, turning a blind eye to a firm’s impacts and dependencies on nature can undermine both morale and confidence as well as company value. Given that transparency issues are inextricably linked to accountability, we urge companies to consider the benefits that measuring natural capital impacts and dependencies can offer, not only to business, but to society and the planet as a whole.

Endnotes

1. World Economic Forum, “Nature Risk Rising: Why the Crisis Engulfing Nature Matters for Business and the Economy,” January 2020, http://www3.weforum.org/docs/WEF_New_Nature_Economy_Report_2020.pdf
 2. Natural Capital Coalition, “Natural Capital Protocol,” <https://capitalscoalition.org/capitals-approach/natural-capital-protocol/>.
 3. Cambridge Institute for Sustainability Leadership, “Modelling better business. Nestlé trials natural capital premium with UK dairy farmers.” Cambridge, UK, February 2018, <https://www.cisl.cam.ac.uk/resources/publication-pdfs/modelling-better-business-case-study-feb-2018.pdf>; Angela Mehta, “Nestlé is paying a premium to UK farmers to try out interventions such as planting hedgerows,” Ethicalcorp.com, March 18, 2018, <http://www.ethicalcorp.com/nestle-takes-natural-capital-approach-make-uk-dairy-farming-more-sustainable>
 4. Carol Ryan, “Danone Seeks More Carbon Credit From Investors: French dairy giant introduces new carbon-adjusted earnings measure that combines environmental and financial disclosures,” *Wall Street Journal*, February 26, 2020, <https://www.wsj.com/articles/danone-seeks-more-carbon-credit-from-investors-11582730141>
 5. Kering publishes an interactive version of this EP&L, as well as associated datasets, on their website: <https://kering-group.opendatasoft.com/pages/home/>
 6. George Monbiot, “Putting a price on the rivers and rain diminishes us all,” *The Guardian*, August 6, 2012, <https://www.theguardian.com/commentisfree/2012/aug/06/price-rivers-rain-greatest-privatisation>.
- Jocelyn Timperley, “The pitfalls of putting a price on nature: What’s next for natural capital?” *GreenBiz*, July 14, 2016, <https://www.greenbiz.com/article/pitfalls-putting-price-nature-whats-next-natural-capital>.

Marcel Harmon, “If we say that nature is priceless, do we end up in effect treating it as valueless?” *Economics*, July 18, 2016, <https://economics.com/if-we-say-nature-is-priceless/>.

7. See, for example, BlackRock CEO Larry Fink’s letter to CEOs from January 2020: <https://www.blackrock.com/corporate/investor-relations/larry-fink-ceo-letter>.
8. Mohr, Jakki J., and Carmen Thissen (2022), Measuring and Disclosing Corporate Valuations of Impacts and Dependencies on Nature, *California Management Review* 65/1 (Fall 2022): 91-118.
9. Johnathan L. DiMuro, France M. Guertin, Rich K. Helling, Jessica L. Perkins and Scanlon Romer, “A financial and environmental analysis of constructed wetlands for industrial wastewater treatment,” *Journal of Industrial Ecology*, 18(5) (18 April 2014), pp. 631-640, <https://onlinelibrary.wiley.com/doi/10.1111/jiec.12129>
10. Garst, Jilde, Karen Maas, and Jeroen Suijs (2022), Materiality Assessment Is an Art, Not a Science: Selecting ESG Topics for Sustainability Reports, *California Management Review*, 65/1 (Fall 2022): 64-90. Jollands, Stephen, John Burns, Markus Milne (2019), Natural capital accounting: revisiting the elephant in the boardroom, Chartered Institute of Management Accountants, <https://www.cimaglobal.com/Research-Insight/natural-capital-accounting-revisiting-the-elephant-in-the-boardroom>



Jakki J. Mohr [Follow](#)

Jakki Mohr, Ph.D., Regents Professor of Marketing, has devoted the past 10 years to research on the interface of business and nature, with a particular emphasis on innovative approaches to inspire and transform business strategy to authentically address environmental sustainability.



Carmen Thissen [Follow](#)

Carmen Thissen (University of Montana, BS in Ecology and Organismal Biology, minor in Climate Change Studies) focused on this project as her senior honor's thesis; post-graduation, she worked at Business for Nature, a Geneva-based organization focused on amplifying business voices calling for policies to reverse nature loss.