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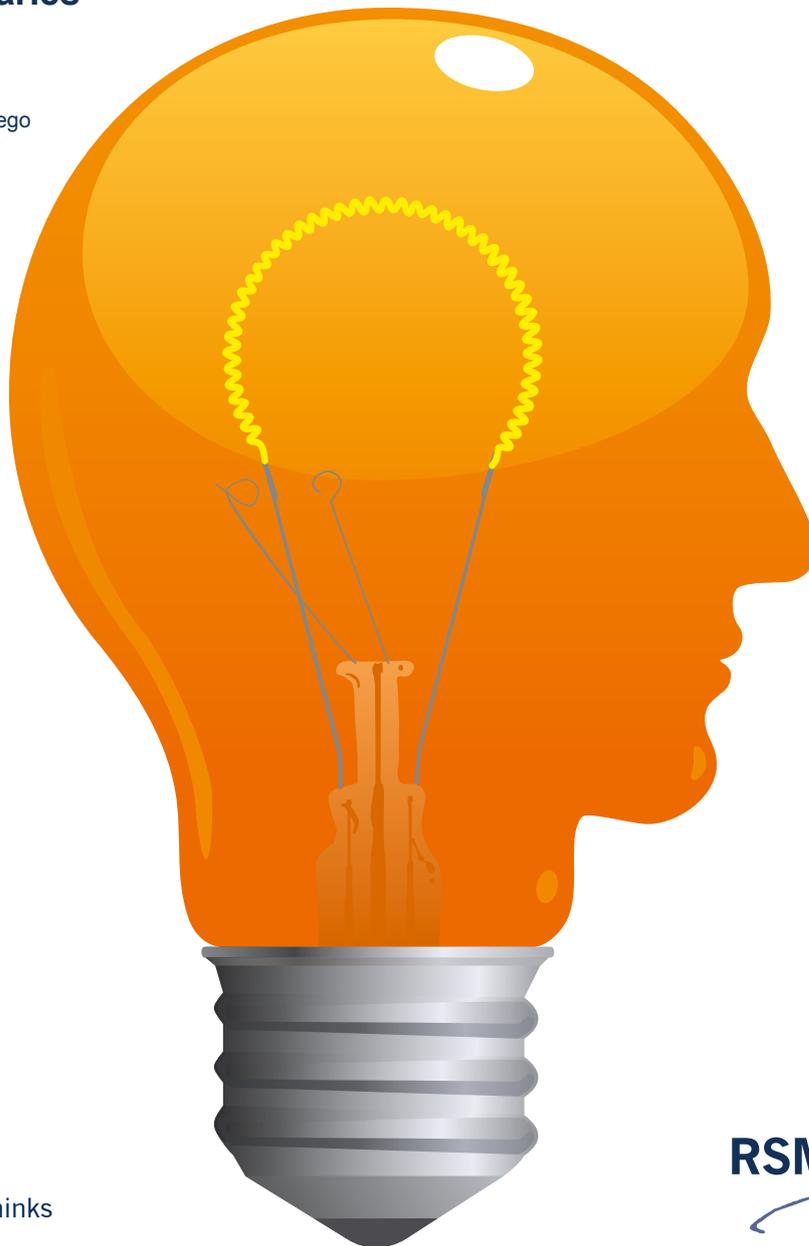
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The business school that thinks and lives in the future

Planetary boundaries and corporate sustainability

by Gail Whiteman & Paolo Perego

Real intellectual innovation happens when multi-disciplinary researchers get together and collaborate. And innovation is urgently needed, if we are to take corporate sustainability to the next level. Supporting this shift, nine ‘Planetary Boundaries’ have been identified by natural scientists, defining the parameters of a safe environment for humanity.



The systemic approach to sustainability of the nine Planetary Boundaries overview shows us the bigger picture: it highlights the danger zones, where we are already dangerously overstepping safe boundaries, in spite of sustainability programmes. With the help of this new input, business researchers now have a framework for the development of more effective corporate sustainability measures, and a collective approach to potentially stemming, even reversing, ecological damage.

Sustainability has become widely accepted in business as a

necessary investment item: 75 per cent of businesses now include it in their strategic planning budgets. Yet deterioration of our global environment continues, and is even accelerating. The nine Planetary Boundaries indicate the limits of ecological damage that we must not exceed, if we are to sustain a safe environment for life on earth. Something new needs to happen, to enable us to slow and reverse negative trends. Corporate sustainability measures need to integrate the insights of natural scientists into business research and measurement.

Our research, forthcoming in the *Journal of Management Studies*, introduces this topic to the business literature and considers the implications for corporate sustainability.

Redefining sustainability

Business researchers over the last few decades have tended to look at environmental issues like toxic emissions, water use or carbon emissions in isolation. Scholars

typically focused on specific industries, individual companies, or separate countries. This works, up to a point. Companies increasingly understand and subscribe to sustainability programmes. However, the Planetary Boundaries concept recognises that environmental issues cannot be managed in isolation. And business cannot afford to ignore the fact that eco-systems are made of interlinked social and environmental processes. We therefore need a more systemic approach to business research, and business sustainability programmes.

Endangered planet

According to Johan Rockström and colleagues (2009), three of the nine key Planetary Boundaries already need urgent attention: the rate of biodiversity loss, nitrogen cycles, and climate change. Crossing the thresholds of these boundaries – as we already have – increases the probability of their negative impact on human well-being. Focusing on single issues such as toxic emissions, however, doesn't take the bigger picture into consideration. Multiple environmental and social processes interact to impact conditions on a regional, even global scale. Similarly, business research that investigates single-issue topics in corporate sustainability also misses the bigger picture.

We recommend more systematic social-ecological research that assesses how corporate actions simultaneously affect multiple boundaries, like land use and biodiversity, and how these changes may reduce planetary resilience and feed back into the global climate system. We need more research on the collective role of companies in biodiversity loss, and on global nitrogen and phosphorous cycles. Sustainability is no longer a fuzzy concept, but a matter of systemic investigation.

Key to the success of this approach is, of course, the availability of relevant data. We need a nitrogen disclosure project, for example, in the same way as we have increasing disclosure of carbon emissions in corporate reporting.

Business research is disconnected from advancements in the natural sciences – and this is a both a gap and an opportunity. By integrating our research within advancements like the Planetary Boundaries framework, business researchers can add value. With its systemic approach to corporate environmental programmes, the Planetary Boundaries approach offers a practical contribution to more effective sustainability measures, and helps set the future research agenda for business research.

Greater awareness of the danger thresholds related to each planetary

boundary provides individual firms and business associations like the World Business Council for Sustainable Development (WBCSD) with a collective yardstick to measure global sustainable performance, and offers strategic guidelines for assessing the scope of corporate sustainability efforts. The urgency of the need to address the three interrelated, priority thresholds – biodiversity loss, nitrogen cycles, and climate change – encourages firms to consider their impact and actions in these areas and to anchor sustainability reporting within the Planetary Boundaries framework.

The role of business

Senior executives are not immune to the need for more systemic collective approaches to sustainability. According to Peter Bakker, former CEO of the multinational company TNT and President of the WBCSD: 'As a company we can reduce our carbon footprint dramatically. But the world's still driving off a cliff. We need a system change.'

Practical action has started to happen. The WBCSD recently signed a Memorandum of Understanding with the Stockholm Resilience Centre to consider how to disaggregate the nine boundaries into actionable targets for firms and industries. It will take a collective effort to solve the issues facing

our planet. We need transdisciplinary integration, and continued collaboration between business management scholars and ecological leaders. It's an exciting and innovative prospect, and it needs to happen. ■

This article draws its inspiration from the paper *Planetary Boundaries: Ecological Foundations for Corporate Sustainability*, which is written by Gail Whiteman, Brian Walker and Paolo Perego, and is to be published in the *Journal of Management Studies*. It is available online at: <http://onlinelibrary.wiley.com/doi/10.1111/j.1467-6486.2012.01073.x/full>

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