Businesses must embrace new ways of thinking or risk missing climate targets, says study

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Businesses must adopt new ways of thinking to effectively reduce their carbon footprint, suggests a new study from Imperial College Business School.

The [study](#), conducted by Dr. Simone Cenci and Matteo Burato of the Leonardo Centre for Business on Society at Imperial College Business School, explored how organizations currently think and act in regards to tackling climate change, and their effectiveness in aligning their emissions with global climate targets.

They worked alongside Dr. Samuel Tang of the Institute for Sustainable Resources at University College London and Dr. Vincenzo Vastola of Montpellier Business School.

The researchers analyzed climate change action data gathered by the CDP (formerly known as the Carbon Disclosure Project)—a leading non-profit international organization that systematically collects information on organizations' carbon management processes and outcomes via surveys.

They reviewed evidence from 622 large publicly-traded companies across 32 countries, working in the energy, industrial, material and utilities sectors, between 2012 and 2020, reviewing emissions targets, total [greenhouse gas emissions](#), supply chain policies, product development and emissions reporting.

"It is well recognized that lowering greenhouse gas emissions to a level compatible with the climate targets set by the Paris Agreement requires significant changes in behavior and attitudes towards environmental issues by both individuals and organizations," says Dr. Cenci, an Advanced Research Fellow and Data Scientist at Imperial College Business School.

"The problem is in the way organizations approach solving such challenges, with a narrowly-focused view meaning many initiatives fail to deliver the level of success needed to reach set national and global targets," he continues.

A new mindset to meet climate change goals

The solution, Dr. Cenci and his colleagues suggest, lies in adopting a 'system thinking' mindset. System thinking explores how individuals can make and understand the connections between a set of events and how they link to their own experiences. This allows them to understand the impact of their own actions and make positive changes to their behavior.

Existing research has found that an individuals' capacity to understand the effect of climate change and to adapt their own behaviors to address it requires the development of specific cognitive abilities, such as system thinking.

The results revealed that the organizations which already exhibited system thinking traits were able to achieve superior environmental outcomes in comparison to others with similar asset characteristics and policies in place, reporting lower greenhouse gas emissions.

The research suggests that, to more effectively combat climate change; organizations need to build Organizational System Thinking into their core processes and functions.

By recognizing that their operations are often out of alignment with their own and wider sustainability goals, and are affected by multiple societal and environmental factors, the research shows that companies can make a greater, more authentic impact—aligning their emissions pathways with those expected by the climate targets of the Paris Agreement.

Furthermore, as individual system thinkers also appreciate that the relationship between themselves and the wider world is ever changing, they recognize that the solutions they put in place need constant refocus and adaptation. Such an approach, Dr. Cenci notes, would allow organizations the flexibility and proactivity many are currently lacking.

The Paris agreement

"Meeting global climate targets, such as those set by the Paris Agreement depends on the actions and behaviors of industry. Therefore, understanding which factors drive the necessary internal changes in management practices that can help companies reduce their emissions is crucial to designing better incentive schemes, such as targeted environmental policies and market-based solutions that can help countries meet their nationally determined contributions," Dr. Cenci concludes.

While governments across the globe have already included system thinking training in educational curricula, these findings, the researchers say, hold important considerations for business leaders. Policies aimed at fostering system thinking within companies could provide a much-needed nudge toward making truly effective changes in organizational sustainability behavior.

The research paper: Organizational system thinking as a cognitive framework to meet climate targets is published in *Proceedings of the National Academy of Sciences* (*PNAS*).

  More information: Matteo Burato et al, Organizational system thinking as a cognitive framework to meet climate targets, *Proceedings of the National Academy of Sciences* (2023). DOI: 10.1073/pnas.2309510120