

Title

Biomimicry - A bio-inspiration tool to design eco-responsible, restorative technologies and strategies for the sustainable development of societies and organisations

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Abstract

In 2009, Rockström *et al* have shown the existence of interdependent planetary boundaries which define boundary limits that encompass a safety zone for the state of the planet, the well-being and survival of all species on earth. Since then, it has been unanimously acknowledged that in order to correctly tackle sustainable development (SD), more systemic tools and approaches must be envisioned. Indeed, this challenge points out to the fact that although many useful SD tools enable the measurements and assessments of individual environmental and social indicators, there lacks an overarching approach that enables a global and integrative analysis that would provide a more reliable picture of the state of the (eco)system studied, while taking into account both the environmental and social spheres. Hence, what is now needed is a multidisciplinary design tool that could generate responsible innovations in both those spheres in order to set the transition towards a post carbon society on the right track.

In this review, the authors propose biomimicry as being one such tool. Biomimicry, or bio-inspiration, relies on the observation and understanding of living systems' functioning principles (from a biochemical to a global biogeochemical system scale) to design innovative yet sustainable solutions that address our societies' current challenges.

Following an introductory section in which the concept of biomimicry will be developed further, the authors will focus on the history, impacts of biomimicry as well as the most recent developments of the European biomimicry landscape. Exemplary projects and emerging initiatives will then illustrate how biomimicry can be put into action, and, finally, recommendations that address biomimicry's barriers to deployment will be expressed, as to provide the possible next steps enabling a wider use of this holistic and inspiring approach.

Proposed bibliography

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