

Global **Biomimicry** Efforts An Economic Game Changer

- > Commissioned by San Diego Zoo Global
- > Researched and produced by the Fermanian Business & Economic Institute.

SAN DIEGO ZOO



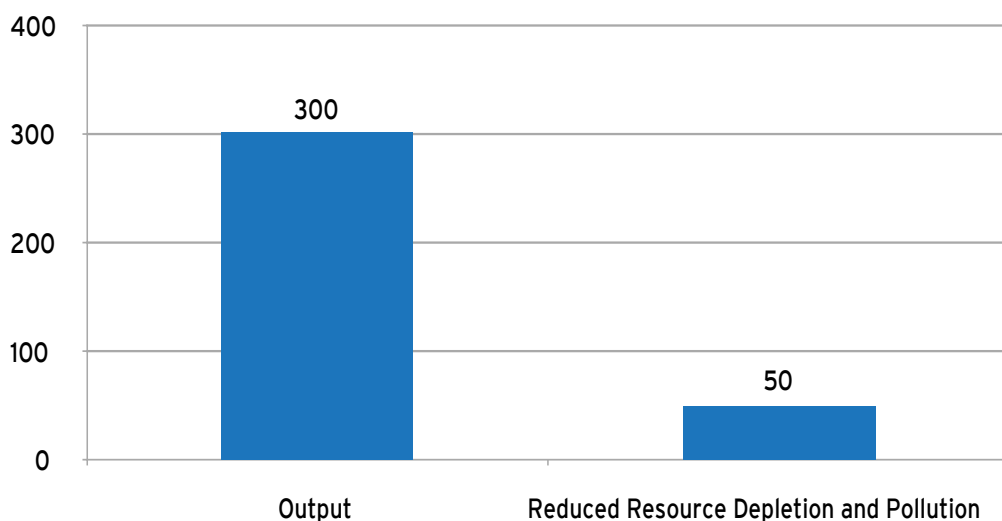
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EXECUTIVE SUMMARY

- > Biomimicry, the discipline of applying nature's principles to solve human problems, provides the means to achieve both environmental and economic goals. Many of the mechanisms and systems found in nature are highly efficient, eschew waste, and are sustainable in a virtually closed system. Biomimicry could be a major economic game changer.
- > While the field today is just emerging, in 15 years biomimicry could represent \$300 billion annually of U.S. gross domestic product (GDP) in 2010 dollars. It could provide another \$50 billion in terms of mitigating the depletion of various natural resources and reducing CO2 pollution. Biomimicry could account for 1.6 million U.S. jobs by 2025. Globally, biomimicry could represent about \$1.0 trillion of GDP in 15 years.
- > Two very different approaches are followed in the use of biomimicry. In some cases, scientists see an interesting concept in nature and then find a commercial application. In other instances, firms are seeking a solution to a specific problem and find an answer in the natural world.
- > Firms selling biomimicry-inspired products in the marketplace have frequently seen a doubling of sales annually in the early years. Many of these products can offer customers reduced energy requirements, less waste, and enhanced performance while being sold at prices competitive with or even less than those of existing products.

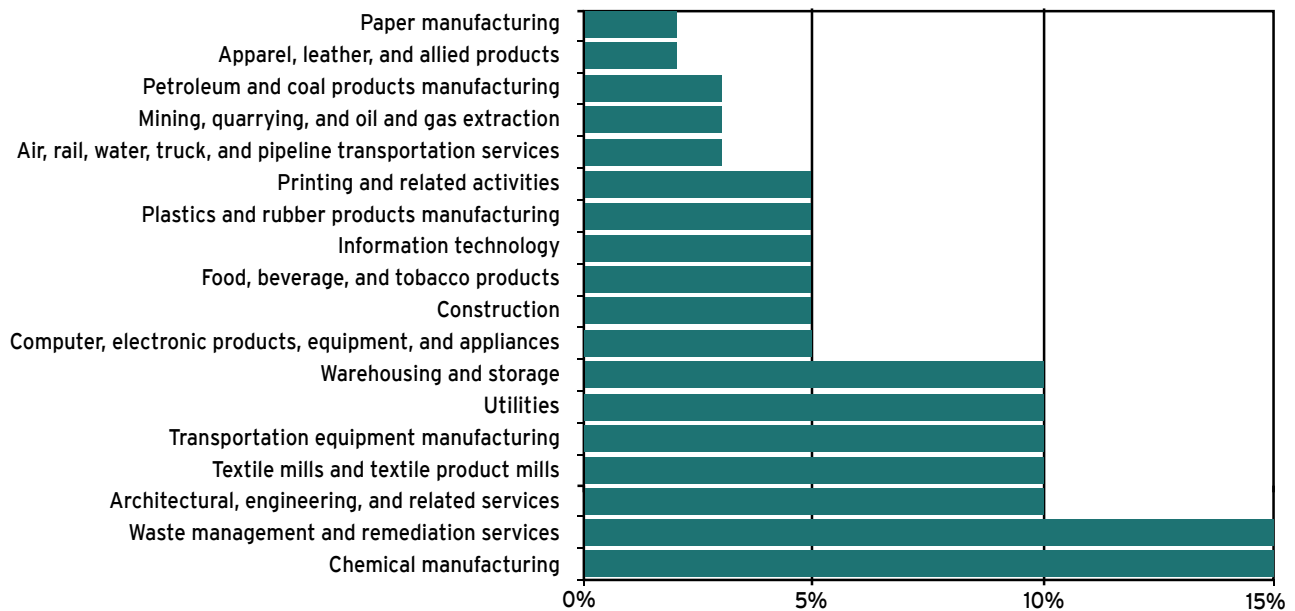
Biomimicry's Estimated Impact on U.S. GDP, 2025

Billions of 2010 dollars



- > Investors should be attracted to biomimicry because of the prospects for rapid sales growth and high rates of return. Venture capital could flow into biomimicry at a pace at least equal to that of biotech, estimated at \$4.5 billion for 2010.
- > San Diego appears well positioned to become a hub for biomimicry. The region possesses four key characteristics: intellectual resources, capital, a strong entrepreneurial base, and a collaborative environment. The San Diego Zoo, with its rich animal and plant collection together with its existing research institute for conservation, appears well suited to lead such a hub.
- > A cluster of 1,000 biologists, naturalists and other scientists could form in San Diego over the next 15 years as a biomimicry core to help take solutions in the natural world to commercial application. Including all of the ripple or multiplier effects, this cluster could generate a total of 2,100 jobs and add \$325 million to San Diego's gross regional product annually by 2025. Biomimicry could emerge as San Diego's next major economic driver, complementing and enhancing such clusters as biotech and cleantech.

Biomimicry's Estimated Market Impact, 2025 Percent of industry sales



Biomimicry is clearly a major emerging area with huge potential. San Diego and the San Diego Zoo appear well suited to be major catalysts and play key roles in the sector's development.

For a copy of the entire report, go to:

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