



OPPORTUNITY

16

SCOPE **VISIONARY**

UNCERTAINTIES

Nature, Technology

MEGATRENDS

Saving Ecosystems

TRENDS

AgriTech
Air Pollution
Biotechnology
Geoengineering
Restoration

SECTORS IMPACTED

Agriculture & Food
Education
Energy, Oil, Gas & Renewables
Financial Services & Investment
Government Services
Health & Healthcare
Infrastructure & Construction
Manufacturing
Materials & Biotechnology
Real Estate

What if nature grew and regenerated faster?

GREEN SPURT

GenAI

Advances in environmental science and biotechnology foster the development of plants, soils, and tools that accelerate nature's regeneration, promoting biodiversity, carbon sequestration, and ecosystem services.





WHY IT MATTERS TODAY

Half of the world's gross domestic product (GDP) is moderately to highly dependent on nature.⁴⁴⁶ Adopting nature-positive pathways for global economic development can increase business value by \$10.1 trillion and create 395 million jobs by 2030.⁴⁴⁷ From an impact perspective, biodiversity loss and ecosystem degradation will cost the global economy some \$5 trillion⁴⁴⁸ and up to 18% of water-dependent agriculture is at risk.

Given this dependency, there are natural solutions can help nature regenerate itself.⁴⁴⁹ Assisted natural regeneration (ANR), for example, is an approach that aims to eliminate human-induced environmental disruptions, like deforestation and forest fires, to speed up nature's ability to regenerate itself. ANR focuses on restoring ecosystem services, such as a robust water cycle, and can be tailored to fit the specific environmental, social, and economic context of a local area.⁴⁵⁰

Biotechnology also holds potential. Researchers at the University of Illinois Urbana-Champaign genetically modified enzymes in tobacco plants, chosen as an experimental crop, resulting in plants that grew 25% larger than unmodified ones,⁴⁵¹ inspiring potential solutions for climate challenges. Trees engineered to grow wood more quickly and sequester more carbon were planted in forests in the United States by Living Carbon, a biotechnology company, in early 2023, with modified poplars growing 50% faster than unmodified ones.⁴⁵²

In research at the University of Illinois Urbana-Champaign, genetically modified

**tobacco plants
grew 25% larger
than controls**





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With advances in environmental science and biotechnology, genomics and bioinformatics enable reforestation to take place at a rate faster than global deforestation, sequestering more carbon and providing more habitats for plants and animals to flourish. This, in turn, can restore ecosystem services in areas affected by nature degradation. Trees and other plants with accelerated growth are customised for each geography they are planted in, allowing them to coexist healthily alongside existing flora.

BENEFITS

Climate change and nature degradation are addressed at the same time through a combination of natural and genetically engineered nature regeneration.

RISKS

Genetically modified species of plants have unforeseen interactions with naturally occurring species, undermining biodiversity and potentially leading to ecosystem imbalance.





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to capture more carbon.**

