

Global Innovation Needs Assessment: Protein Diversity

ClimateWorks Foundation & UK Foreign, Commonwealth, and Development Office,
November 2021. Summary prepared by the Good Food Institute ([read the full report](#))

Topline summary

“To unlock the full benefits of alternative proteins, global public spending on RD&D and on commercialization needs to increase to at least US\$4.4 billion and US\$5.7 billion per year, respectively.”

Key findings

Alternative proteins can yield major climate mitigation benefits. “By 2050, the alternative protein transition could save more than 5 Gt CO₂ eq/year.” Additionally, emissions from land use change would remain close to zero after 2035. This assumes the alternative protein market will account for over 50 percent of the global protein market by 2050.

There are also other important environmental benefits associated with alternative proteins. “Alternative proteins will produce the same total calories as [conventional animal] proteins but do so using 640 million fewer hectares, thus freeing land for nature and making both biodiversity and deforestation targets easier to meet. Under the high-innovation scenario, soybean production, which is heavily used for feed production and is often linked to deforestation of the Amazon rainforest, would halve by 2050, reducing both deforestation risk and pastureland, thereby allowing for the restoration of natural ecosystems, including biodiverse and carbon-dense forest area.”

Alternative proteins can reduce crop prices, which is important for food security and malnutrition. “Average crop prices could be more than 12 percent lower globally by 2050 in a high-innovation scenario, compared with a 1.5° C future with slower uptake of diversified protein. Lower prices mean protein-rich diets are affordable for more consumers, reducing malnutrition.”

Alternative proteins can also yield major economic benefits. “The transition to alternative protein products could deliver more than US\$740 billion in GVA by 2040 and up to US\$1.1 trillion by 2050.”

Government support for RD&D and commercialization of alternative proteins is critical. “To unlock the full benefits of alternative proteins, global public spending on RD&D and commercialization needs to increase to US\$4.4 billion and US\$5.7 billion per year, respectively. Investment in R&D and commercialization has the potential to significantly reduce production costs, but it can take time. Governments can accelerate price parity of alternative proteins and traditional livestock products by lowering alternative-protein product prices using public economic instruments such as subsidies, as is the case for traditional meat and dairy products.”