Innovation Case for COP28: Alternative proteins

Innovation Commission: Climate Change, Food Security, Agriculture
Innovation Commission Research Brief
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Summary prepared by the Good Food Institute (*full research brief available here*)

Topline summary for alternative proteins

"Alternative protein innovation has the potential to contribute to climate mitigation, relieve food insecurity, and help address malnutrition."

Alternative proteins can relieve food insecurity: "Alternative proteins can help relieve food insecurity by reducing the risk of food price spikes from animal feed demands."

"Lobell et al (2011) found that climate trends between 1980 and 2008 led to a 3% loss in calories, which led to roughly 20% higher commodity prices relative to a counterfactual scenario without warming. Price increases would clearly be much greater under the 9 percent (by 2050) and 25 percent (by 2098) yield losses projected in a high emissions scenario (RCP 8.5). Baldi et al 2021 estimate a 4 percent shift to plant-based meats would result in crop prices being 13 to 23 percent lower on average relative to a counterfactual with no plant-based meat."

Alternative proteins can also decrease emissions directly: "In high- and upper-middle-income countries, alternative proteins could reduce greenhouse gas emissions by substituting for conventional meat products if they can compete on taste and price."

And they can address malnutrition directly: "Investing in alternative proteins now could help address malnutrition, a key driver of which is a lack of access to affordable, high-quality proteins."

They are also a more climate resilient way of producing protein: "Investing in alternative proteins could help insure against worst-case scenarios by reducing emissions and by providing a climate-resilient source of proteins."

Governments and philanthropies should fund alt proteins research: "R&D investments in alternative proteins offer option value under the worst climate change and food security scenarios... Public and philanthropic investment in basic research could accelerate innovation in alternative proteins for climate mitigation in high and upper-middle-income countries."

Climate mitigation grounds alone justify these investments: "Greater public and philanthropic R&D funding can fill the gap left by commercial markets... A one percent reduction in annual livestock emissions would have a social value of approximately USD 6.65 billion using an assigned 2020 social cost of carbon of USD 190... Current public investments in R&D for alternative proteins fall short of their potential social value - larger investments by high-income countries in basic R&D would be justified on climate mitigation grounds alone."