

Agricultural (Efficiency)

From growing food crops, to herding livestock, to growing crops for things like paper and rope, agriculture represents one of the largest expenditures of energy in modern society. As such, it is also one of the largest producers of greenhouse gasses. Techniques to reduce energy costs and emissions from agriculture could have a huge impact on our contribution to climate change.

Agriculture, specifically the growing of plant crops, also represents one of the most reliable methods for pulling CO₂ out of the atmosphere—via photosynthesis. If that carbon can then be removed from the surface carbon cycle, it could be an important method of sequestration.

Limited-spectrum LEDs for indoor farming

[Indoor farming](#) reduces water wasted through evaporation and irrigation, reduces the need for pesticides, and allows for year-round food production. It also means that, in theory, food can be grown near or even in the cities in which most of it is consumed.

Tortilla chips made out of crickets

[This company](#) has developed [food made from insects](#) that looks and tastes just like one of America's favorite snack foods. They're high in protein, low in fat (for chips), and good for the environment!

Growing food in the desert

Creative use of photovoltaics, architecture, and natural resources allows for [indoor farming in the desert](#).

"Aquapod" fish farming

[Moveable, spherical fish farms](#) could be the basis for more efficient aquaculture, which will be especially important as the oceans' natural fisheries decline.

Grass-powered lawnmower

A [robotic lawnmower](#) powered by the grass it clips, and that can store the grass-power for later use.

Insects for protein

An [open-source bug farm](#) could provide a way for people grow their own protein at a low financial AND low environmental cost.

Beetle wing casings to make plastic

A Dutch designer has developed a way to convert [beetle wing casings](#)—made mostly of chitin—into a kind of bioplastic. Given that a number of people are trying to develop ways to farm insects for food, chitin-based plastics could turn out to be a major part of manufacturing in the future.

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