

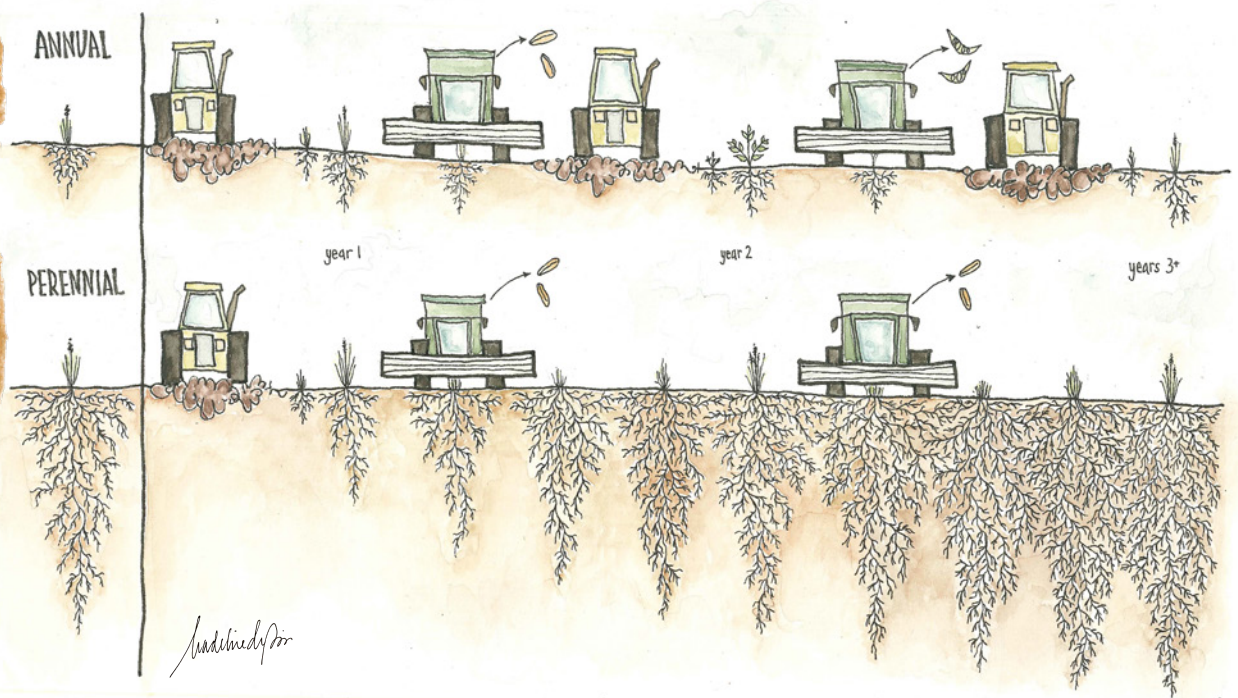


How do we achieve high-yielding, climate-resilient food crops with robust ecological, economic, and social benefits?

Perennial Grains

What are Perennial Grains?

Perennial grains are new hardware for agriculture that can transform how we farm by changing what we grow. These long-lived alternatives to major grains, including cereals, legumes, and oilseeds, will allow farmers to plant once and harvest a crop for many years without replanting.



Because perennial grains can live for three or more years and grow long roots that extend deep into the ground, they could build healthy soil, absorb water, protect soil from erosion, retain nutrients, foster biodiversity, and remove carbon dioxide from the air. Kernza® and perennial rice are examples of new perennial grains — and many more of these grains are in development to be released over the next two decades. New perennial grains will form the basis of new perennial cropping systems, like intercroops and polycultures, that can further reduce the need for inputs.



High-Yielding Perennial Rice Breakthrough

The journal *Science* named perennial rice a 2022 top 10 breakthrough, helping farmers improve their livelihoods, adapt to extreme weather, increase soil health and carbon load, and reduce water and nutrient loss while meeting food demands. Because perennial rice is planted once and lives for four years with eight harvests, it led to a 60% reduction in labor and reduced input costs by almost half.

Funding the Future of Research

For new perennial grains to succeed, we need substantial investment in plant breeding, crop production, and early supply chain development. With proper funding, perennial grains with high yields comparable to annual grain analogs can develop relatively quickly while retaining robust ecological co-benefits. Researchers in Yunnan, China, achieved high-yielding perennial rice in just 20 years, with support from The Land Institute, with significantly less funding than is spent on annual incremental commodity grain yield improvements.

Key Research Partners



Featured In



Building a Global Network

Agricultural innovation requires scope and scale, with many researchers, test sites in multiple geographies, and sustained financial resources dedicated to perennial grain advancement. While The Land Institute facilitates over 170 researcher collaborations on six continents, these networks must rapidly expand to intensify efforts globally.



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About the Land Institute

The Land Institute is leading the movement to develop perennial grain food crops and agriculture based on the principles of natural systems with holistic ecological, social, and economic benefits.

Learn more at landinstitute.org