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What to eat in times of crisis?







The Perennial Revolution 2020s and 2030s:

The Perennial Revolution was a period in the 2020s and early 2030s when agricultural practices changed profoundly all over the world. Before the perennial revolution, agriculture had been totally dominated by the cultivation of annual crops in monocultures for about 10,000 years when humanity changed from hunters and gatherers to farmers. Since the Neolithic Revolution, two important changes occurred that reinforced the use of annual monocultures: The Nitrogen Revolution (invention of the Haber – Bosch method for manufacturing nitrogen fertilizer) and the Green Revolution (which boosted the productivity of some of the most popular crops). But both these distinct changes were based on the same agricultural hardware – the annual plants. Until the Perennial Revolution, people were almost exclusively dependent on annual monocultures for their staple food, such as wheat, rice, maize, and sorghum. At that time, agriculture was considered the most polluting activity humanity ever invented, and the root cause of most all of the problems in agriculture was the fact that they used annual crops. These crops were responsible for disturbing the soils every season, which resulted in emission of greenhouse gases, soil erosion and nutrient leaching; the energy input to agriculture was almost as high (and 99% fossil based) as the energy that was harvested; the costs of production were high due to farmers' dependence on expensive external inputs (seeds, agro-chemicals, mineral fertilizers, machinery, and fuel), and landscapes were subject to a rapid decline in ecosystem services such as pollination. Coastal waters were particularly polluted by nutrients leached from farmland - over 400 areas were considered dead marine zones. Thanks to the transition to perennial polycultures it was possible to prevent an ecological collapse of the Baltic Sea and many other dead zones. The Paris Agreement of 2015 helped avert a climate crisis thanks to the profound contribution from the perennial revolution. Before that, agriculture was responsible for 30-35% of the global greenhouse gas emissions. Now agriculture is a sector that is sequestering carbon instead of releasing it. A looming global food crisis was also averted because the perennial polycultures could combine food production with sequestration of atmospheric carbon in the soil. In the beginning, the perennial crops yielded far less than the old varieties, but systematic research in plant sciences and agroecology made it possible to increase productivity of the new crops. Dedicated research in the social sciences and economics paved the way for political support for the perennial revolution.



Willard W. Cochrane 1958: Farm Prices: Myth and Reality. St. Paul: University of Minnesota Press.



Crews, T., Carton, W., Olsson, L. 2018: Is the Future of Agriculture Perennial? Imperatives and opportunities to reinvent agriculture by shifting from annual monocultures to perennial polycultures. *Global Sustainability* (1:2018)

Relative (1980) real prices of US agricultural produce, and three inputs



Crews, T., Carton, W., Olsson, L. 2018: Is the Future of Agriculture Perennial? Imperatives and opportunities to reinvent agriculture by shifting from annual monocultures to perennial polycultures. *Global Sustainability* (1:2018) (updated from USDA ERS 2022)



De novo domestication

Wide hybridization

How were PERENNIAL grains developed

Silphium

Sainfoin

Perennial Wheat

Perennial Sorghum





Second Dimension



"The research identified 14 companies and trade bodies that had pushed back against EU environmental and agrochemicals policy in recent years. Industry representatives had hundreds of meetings across European Commission and **European Parliament committees and** commissions that work on agriculture, environment, food, and chemical safety between 2019 and October 2021. This includes 13 entities registered as official lobbyists via the EU's Transparency Register. These groups spent at least a combined €45.9 million on lobbying in 2019 and 2020, according to the latest available data on their lobbying spending from official EU data."

De Lorenzo, Daniela, Sherrington, Rachel, 2021: Mapped: The Network of Powerful Agribusiness Groups Lobbying to Water Down the EU's Sustainable Farming Targets. DeSmog at https://www.desmog.com/2021/12/09/network-agribusiness-chemicals-pesticides-lobbying-eu-sustainable-climate-farming/

An international network for a perennial grains revolution ...









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Nyheter och evenemang



2023-03-30 Nyheter

Pufendorf-Temat banar väg för nya genombrott om perenna grödor ⊘

Professor Lennart Olsson har tilldelats ERC Advanced Grant på 2,5 miljoner euro för att vidareutveckla och fördjupa sin forskning om perenna grödor för en övergång till ett hållbar.



Pufendorfinstitutet på Hållbarhetsveckan 2023



2023-02-20 Nyheter

⊕ English website ⊄୬ Lyssna

Skulle vi kunna jobba på Mars? (5)



2023-04-03 Nyheter

Fyra nya Teman startar hösten 2023 ③



2023-02-20 Nyheter

Tar rymden till hjälp för att föreställa sig framtidens arbetsliv – på jorden ⊙



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