KŌK PROJEKT
food • agri • water

The New Paradigm III

Regenerative Agriculture

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we're working for **the future of food**

Kök Projekt is an agri-food startup accelerator and an innovation partner for **the food, agriculture and water sector companies**.

We work together with companies, NGO's and governmental organizations to establish interfaces for entrepreneurs to reach beyond their potential.

food agri water energy

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we work through **the food value chain**

goverment / NGO's
regulators / IGO's

producers of
production inputs

farmers
& growers

processors
& traders

retailers

consumers

Food,Soil & Challenges

Challenges of Food System

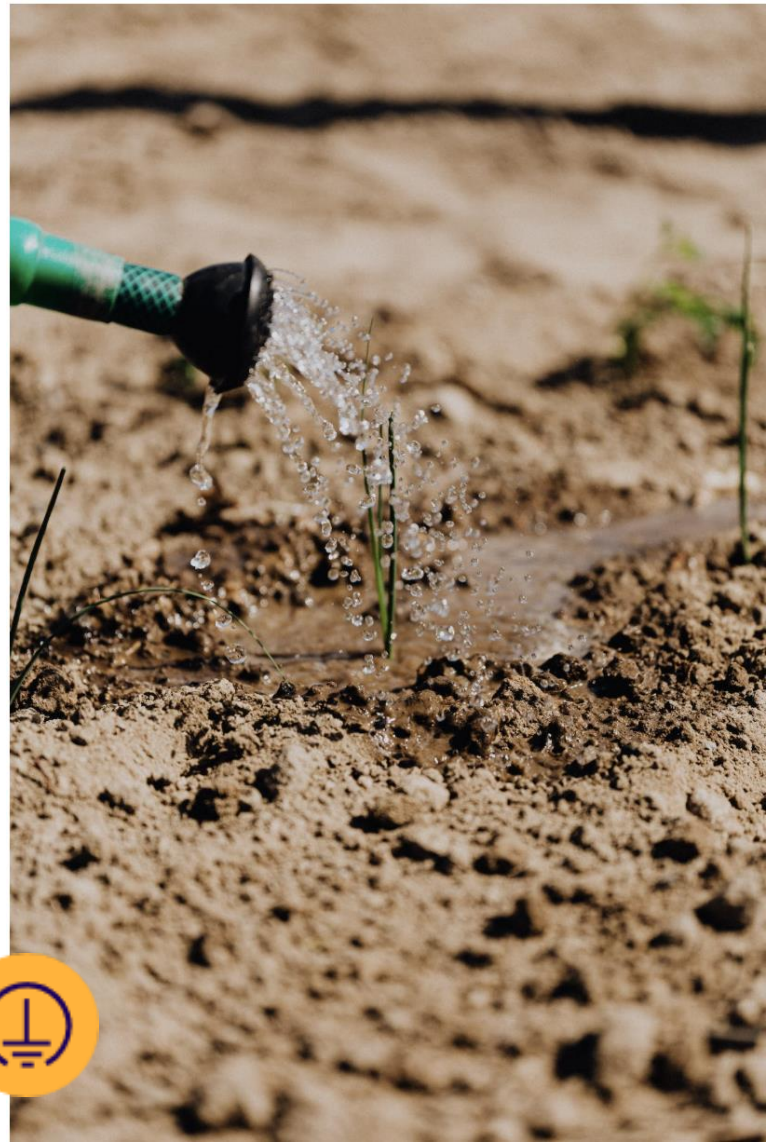
Rising Population & Changing Diets

- By 2050, the world's population is projected to reach over 10 billion, which will result in a 50 percent increase in agricultural demand compared to 2013 (FAO, 2017)
- Income growth in low- and middle-income nations would speed the shift in dietary preferences toward greater intake of meat, fruits, and vegetables in comparison to cereals, necessitating corresponding changes in productivity and placing further strain on natural resources. (FAO, 2017)
- Moreover, the challenges facing the food and agriculture sector will increase with climate change.

Mind The Soil

Healthy Soils & Healthy Foods

- Feeding a growing population requires more food. Thus soils have a great importance.
- FAO mentions that healthy soils are the basis for healthy food production.
- According to estimates, our soils directly or indirectly produce 95% of our food.
- The production of food and animal feed depends on healthy, living soils. Our soils have come under increasing pressure over the past 50 years as a result of improvements in agricultural technology and greater demand brought on by a growing population.
- In many nations, intense agricultural production has depleted the soil, endangering its ability to produce enough food for current populations as well as future ones. (FAO,2015)



Status of the World's Soil Resources

> Today, 33 percent of land is moderately to highly degraded due to the erosion, salinization, compaction, acidification and chemical pollution of soils. Further loss of productive soils would severely damage food production and food security, amplify food-price volatility, and potentially plunge millions of people into hunger and poverty.

Source: FAO, Status of the World's Soil Resources, 2015
https://www.fao.org/3/bc589e/bc589e.pdf

Regenerative Agriculture

What is Regenerative Agriculture?

Definition

- **"Regenerative agriculture describes holistic farming systems that, among other benefits, improve water and air quality, enhance ecosystem biodiversity, produce nutrient-dense food, and store carbon to help mitigate the effects of climate change."**

- Regenerative agriculture systems help to achieve food and nutritional security with economically viable and ecological sustainable options. FAO,Regenerative Agriculture)

Regenerative Agriculture

A Holistic Approach to Agriculture

- Regenerative agriculture is a set of farming practices that improves biodiversity, soil quality, watersheds and ecosystem services.

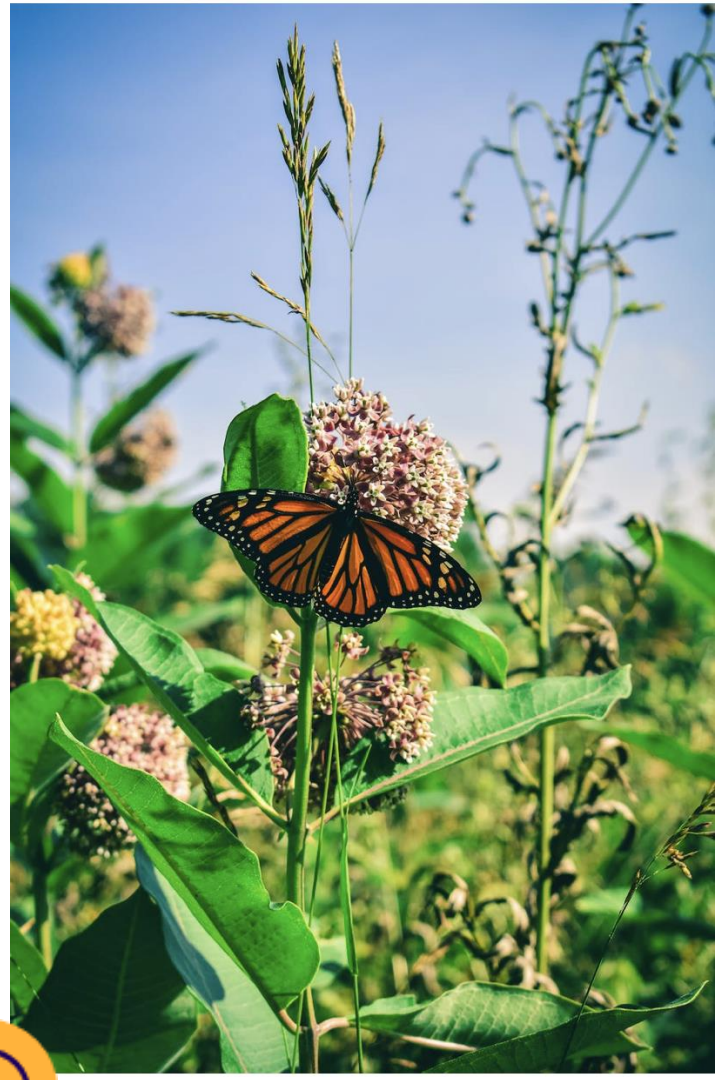
- The main focus is on the soil and creating a holistic approach to farming. While conventional farming separates crops and livestock production, regenerative agriculture combines them in circular systems, the animals feed the plants and the plants feed the animals. (EIT Food, 2020)

Principles of Regenerative Agriculture

Top 5 Principles

- Minimize the disturbance of soil
- Keeping the soil covered with vegetation or natural material
- Increase biodiversity, plants & animals
- Minimize the use of chemical inputs
- Adapt to local environment

(EIT Food, 2020)



Benefits of Regenerative Agriculture

Social & Economical & Environmental

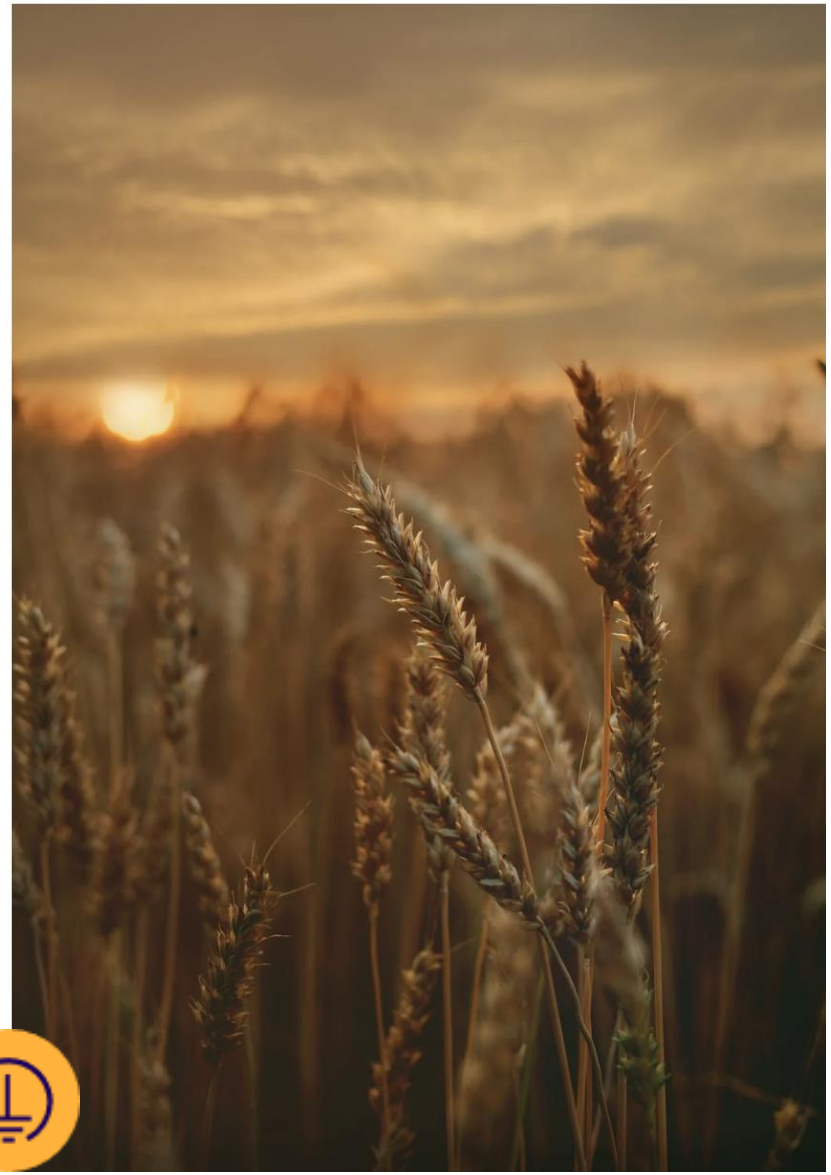
- Regenerative agriculture offers several advantages to farmers environment and society.
- Regenerative agriculture boost soil fertility and health which leads to increased farm productivity.
- In addition to making farms more resistant to drought and floods, regenerative agriculture increases the land's capacity to filter and retain water which will also help to reduce erosion.
- It improves biodiversity and ecosystem resilience
- Healthy soil can capture a significant amount of carbon from the air and store it. Thus regenerative agriculture helps to mitigate climate change.
- It also offers economic benefits by cost savings from reduced use of chemical inputs.

(Chesapeake Bay Foundation)

Disadvantages of Regenerative Agriculture

- To integrate regenerative agriculture farmers need to acquire new knowledge and skills.
- One of the five principal of regenerative agriculture is minimize the disturbance of soils which requires less tilling. However, less tilling might result in more undesirable plants. Some farmers adjust by use more herbicides.
- It is possible to get lower yields depending on crops and local conditions.
- It will take time to move away from conventional techniques.

(EIT Food, 2020)



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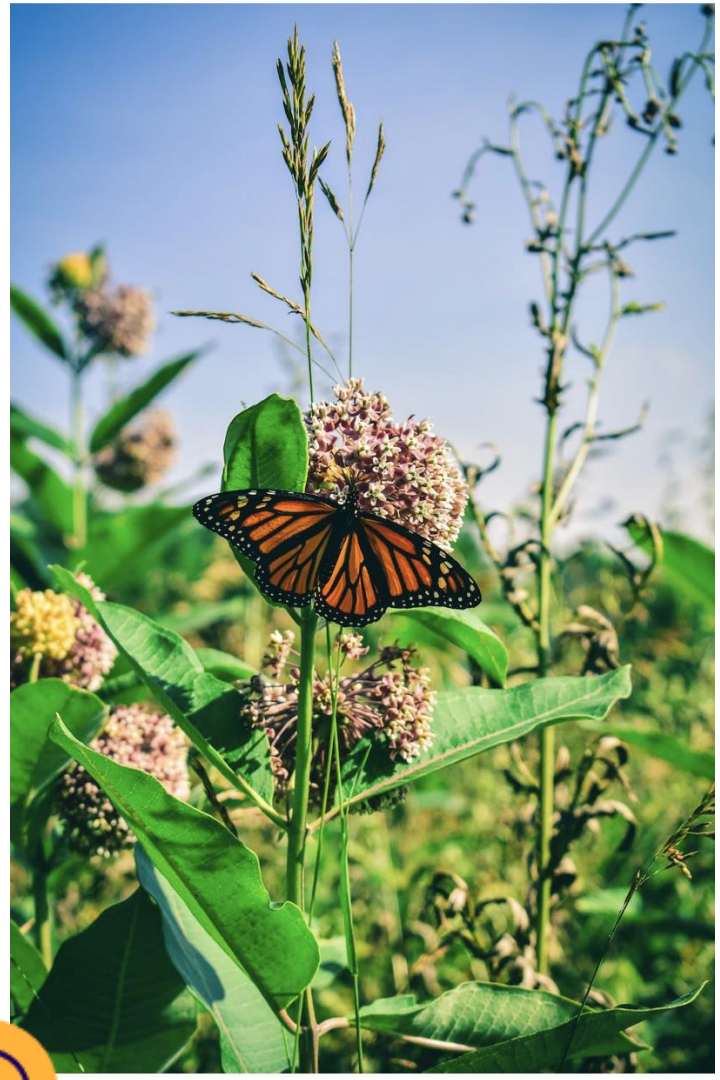


Impact of Technology

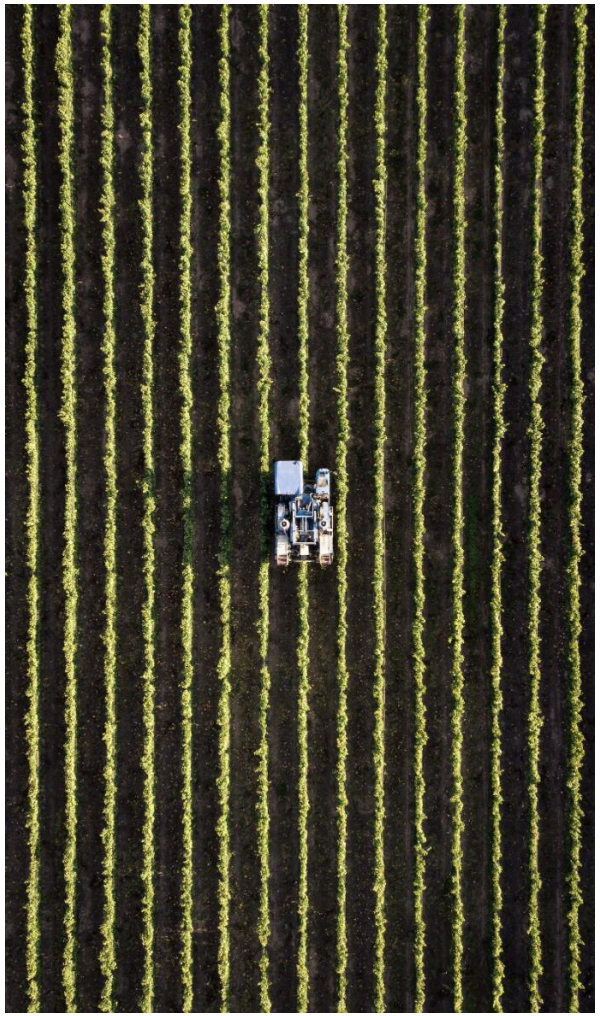
Startups in the service of paradigm shift

- Although technology can not be a silver bullet for the current food system problems, it may help to create more sustainable, efficient, fair, and healthy food supply chains.
- In our third report for the new paradigm report series, we look for startups and the technologies that they use to create a more resilient food, agriculture and water system.
- To begin with, we choose three startups from Spain, USA, and Germany to look for their value proposition.

Husk

Building Soil, Sinking Carbon, Improving Lives

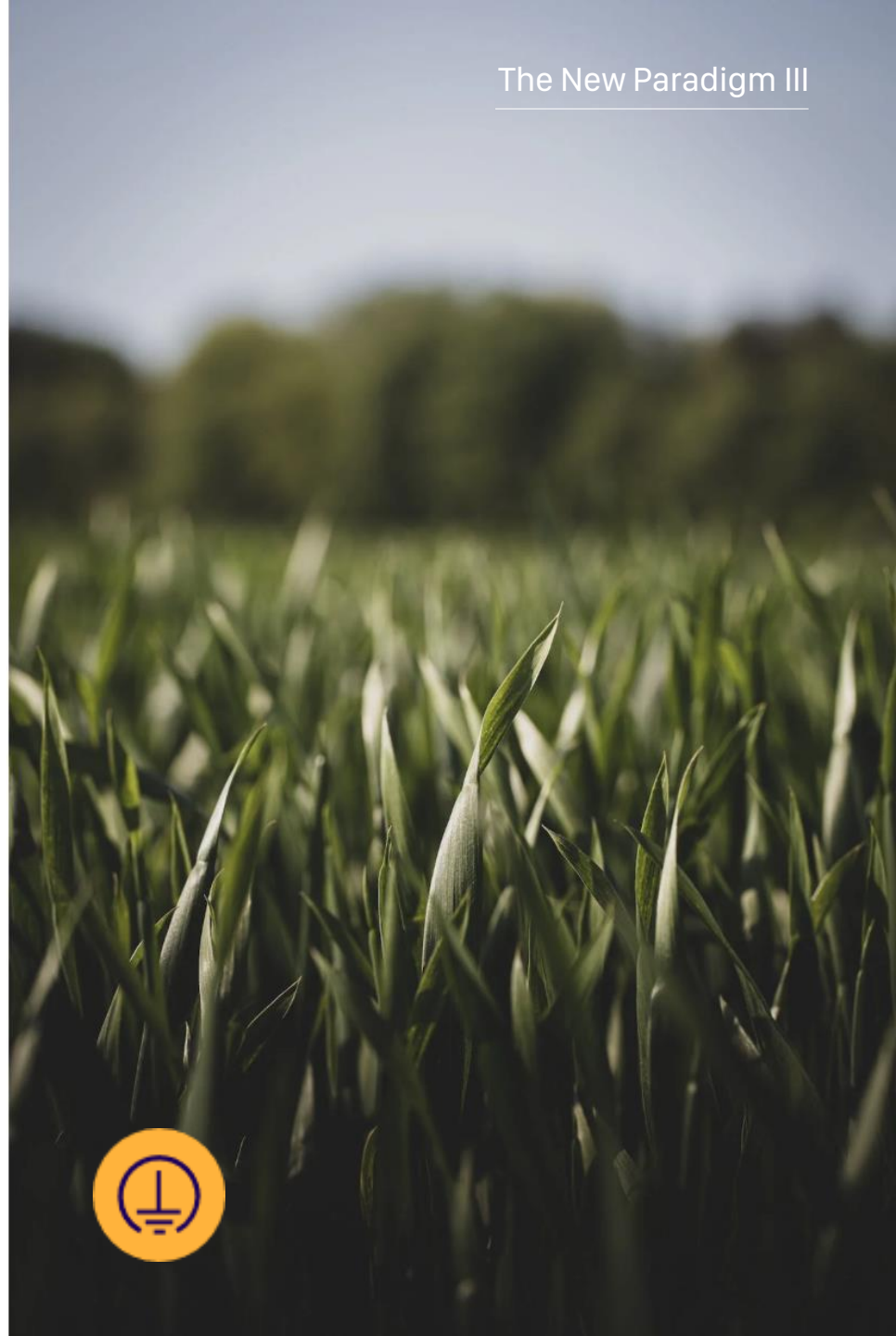
- Husk describes their mission as “to improve smallholders’ livelihoods by transforming husk into biochar to regenerate soils, increase yields and capture carbon.”
- The company’s first installation in Cambodia produces biofertilizers and sequesters carbon with two continuous flow pyrolysis units in a rice mill. They transform an undervalued byproduct of the rice industry into effective and affordable agricultural inputs for smallholders.
- Husk mentions that their solution is climate positive, supporting farmers to adapt to climate change with more resilient soils, and reducing emissions from the rice industry, by fixing the carbon from rice husk into the soil, where it remains for hundreds of years.



Aigen

Unlock regenerative agriculture

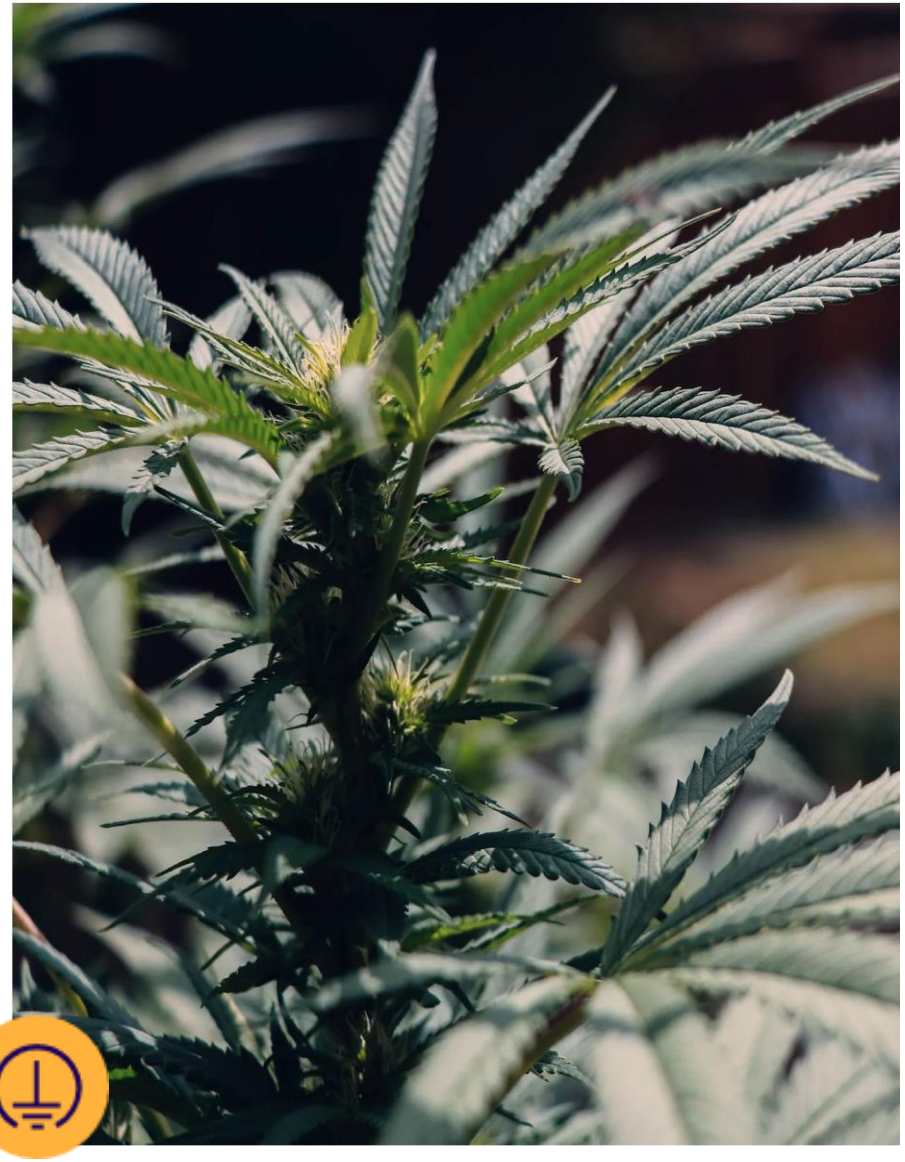
- Founded 2020 in Kirkland, WA, USA, Aigen is a on mission to unlock regenerative agriculture at a massive scale with a pesticide-free, solar powered robotics platform.
- Aigen claims a planetary recovery through the soils.
- According to their web site more than 50% of our soils are degraded—by chemicals and soil management practices that undercut the potential positive impact. At Aigen, they are restoring our planet's health, through the land and our soils with an affordable, precision edge robotics platform.



Klim

The Movement For Regenerative Agriculture

- Berlin based agritech startup Klim Klim is creating a joint movement with farmers, businesses and consumers to scale regenerative agriculture.
- The startup aims to sustainably reduce CO_2 emissions, improve soil health and biodiversity, and thus make an important contribution to climate protection while safeguarding yields.
- Klim is a full service provider for implementing regenerative agriculture in the supply chain.
- Klim works with all stakeholders along the agricultural supply chain, from farmers and processors to food companies and retailers.



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Source

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