



# Protecting Central Future with Microalgae Technology

- Speaker: Mr. Zhang Yu — Founder & CEO, Soil Ark



## WHO WE ARE

# Eight years of practice, one mission

over 100,000  
hectares

China's on-site data  
accumulation,  
spanning over 8  
years

ADB Climate Resilience  
Competition

Climate Solutions for the Five  
Central Asian Countries:  
China's Only Award-Winning  
Team

December 2025

The world's first local  
standard methodology  
for methane emission  
reduction in rice  
paddies

"What we bring here is not a technology waiting to be verified, but a set of mature solutions that can be directly replicated in this region."



## THE CRISIS

# What is happening on this land?

### Evaporation vs Precipitation

Annual evaporation > 2,000mm vs annual precipitation < 150mm  
Evaporation is 13 times greater than precipitation

### The Tragedy of the Aral Sea

Over the past 50 years, the area of exposed lake bed has shrunk by more than 75%

### Salt and soil carried away by strong winds

Every year, about 100 million tons of saline-alkali dust storms cover farmland, pollute water sources, and invade. Erosion soil

### land salinization

The proportion of saline-alkali land in Central Asia is greater than 50%  
And it continues to expand every year

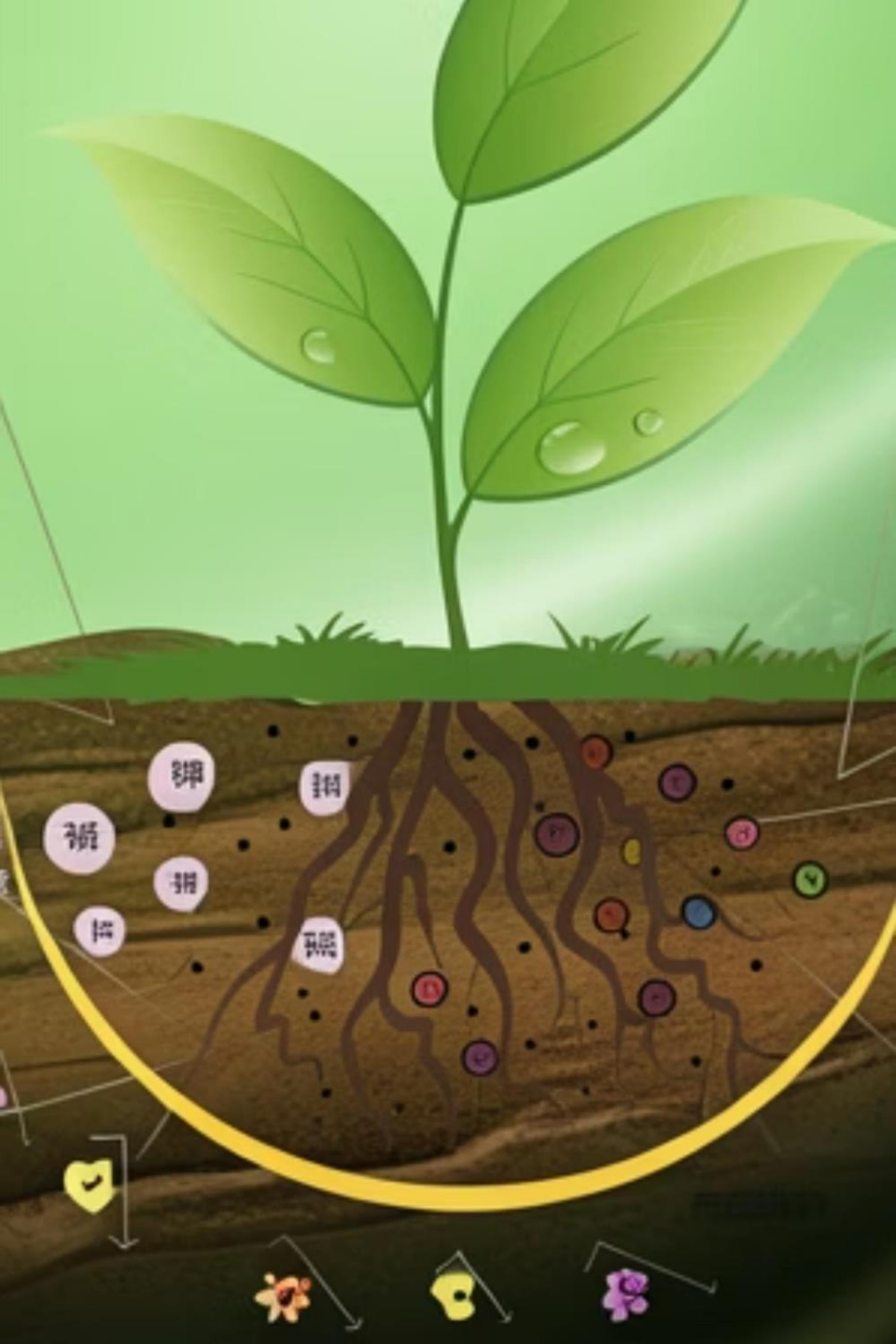
"Farmers in Central Asia are using increasingly poorer land to feed a growing population"



## WHAT IS MICROALGAE

Microalgae are the earliest photosynthetic organisms on Earth.





## HOW IT WORKS

How do microalgae remedy soil?

- Repair the soil.
- Capture nitrogen and carbon from the air
- Help crops survive hard conditions
- Save water and fertilizer



## PROVEN RESULTS

### Cotton in Xinjiang

Yield increase +10%

Fertilizer usage reduction -25%~40%

### Wheat in Hebei

Yield increase +27%

Fertilizer utilization rate increased from 30% to 55% ~ 68%

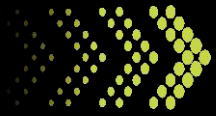
Microalgae technology: Fertilizer utilization rate increased to 55% to 68%

— same input

higher output

less pollution

" a set of mature solutions that can be directly replicated in Central Asia."



# BUSINESS MODEL



Patent grant



Carbon rights



Data Finance

Regional Microalgae Seed  
Production Center:  
cover 6666.67-33,333,33  
hectares of land

Positive Cycle:  
factory profit → expansion  
to more farmers → soil  
remediation



Empowering Growers :  
equipment strains and training ,  
self-sufficient

Abundant Reward:  
every \$1 invested → returns of \$5 or  
more.

local laboratory, algae seed bank, patent application, technical training



PARTNERSHIP PATH 01

# Co-build a talent incubator

Goal: Train thousands of local technology leaders



## PARTNERSHIP PATH 02

# International Climate Demonstration Project

initiate climate-adaptive agricultural demonstrations at the lowest cost, leveraging international development funds to invest in soil health in Central Asia.

"\$100,000 startup → 50 farmers → spread across Central Asia"



## PARTNERSHIP PATH 03

# Global carbon market pay for the soil in Central Asia

Establish a methodology for agricultural carbon emission reduction in Central Asia, standardize and capitalize the emission reduction, and enable automatic inflow of global industrial carbon offset funds into Central Asian farmlands.

"No reliance on subsidies - a financial closed loop where industry nurtures agriculture."

This land has nurtured the civilization of  
Central Asia for thousands of years

"The challenges it faces today cannot be  
addressed by any single country."

"But it's not unsolvable."





The integration of technology and business , is the most efficient way to serve the public



An aerial photograph of a mountain valley. A river flows through a lush green forest, with the sun reflecting off its surface. The mountains are covered in greenery and have patches of snow. The sky is blue with scattered white clouds.

Cool down the Earth by 1 °C

Soil Ark