LIQUID NATURAL CLAY





LNC: A GAME-CHANGER





Liquid Natural Clay (LNC) is a 100% natural, locally manufactured, chemical-free mixture of water and industrial clay. It can be applied using existing irrigation systems, where it seeps into the soil, creating spongy structures at the root level.

AS SEEN ON:







TRTWORLD



Arabian

Khaleej Times



WE SUPPORT:







OUR SUPPORTERS:









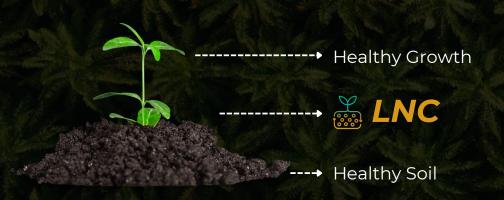












SUPPORTING UN SUSTAINABLE **DEVELOPMENT GOALS:**







Increases soil fertility and crop vields securing food sources for millions.



CLEAN WATER & SANITATION (SDG 6):

Reduces irrigation water use by up to 50%, making agriculture more sustainable.



CLIMATE ACTION

13 CLIMATE ACTION

Improves carbon sequestration reducing CO₂ emissions.



LIFE ON LAND (SDG 15):

Restores biodiversity, improves ecosystems and prevents further land degradation.



COST: AFFORDABLE, ABUNDANT, NO HEAVY EQUIPMENT

LNC is made from affordable and abundant materials, requiring no heavy machinery, significantly lowering operational costs.



PRACTICALITY: NO TREE OR PLANT REMOVAL

LNC can be applied without removing trees or plants, making it a practical solution for developed or vegetated areas.





Water Saving

Cut water usage in half, ideal for water-scarce regions.

Up to

Higher Yields

Grow more with less water and fewer resources

VALUE CREATION: TRANSFORMING LAND THROUGH SOIL REGENERATION

LNC revitalizes degraded or low-value land by improving soil health, enabling new possibilities for agriculture, landscaping, or future development.



ROI: ACHEIVED WITHIN A **SHORT TIMEFRAME**

ROI can often be achieved in as little as 6 months, making LNC a quick-return investment for farmers and land developers, depending on water costs and project scale.

Safe, sustainable, and environmentally friendly.

Natural

®100%

Other Savings: Improve soil health for up to 5 years, reduce carbon footprint by 15-30%, cut fertilizer costs by 15-20%, and lower maintenance expenses by 10-20%, all while enhancing efficiency and sustainability.



Executive Summary



Limited resources

Water, fertile soil, imported labor.



Rising demand

Growing population, growing cities, agricultural demand, desert greenery.



The solution

LNC is an organic, natural, water-saving solution set to be a game changer.

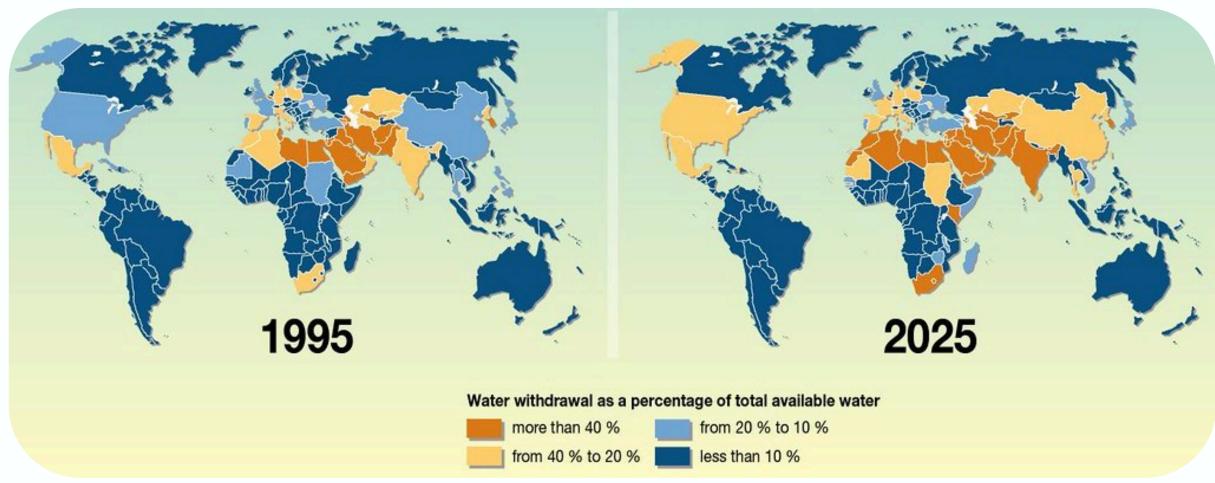
Limited resources, such as water scarcity, diminishing fertile soil, and reliance on imported labor, are placing immense pressure on the agricultural sector.

Rising demand due to population growth, urban expansion, and increased need for agricultural production and desert greening is further intensifying this strain

In response, Liquid Natural Clay (LNC) provides an innovative, organic solution that conserves water and revitalizes soil, positioning itself as a revolutionary tool for sustainable agriculture and landscape management.

Global Challenges
We Face





Water Scarcity

Agriculture accounts for 70% of global freshwater use, but by 2025, 1.8 billion people will live in regions with absolute water scarcity, severely affecting agricultural sustainability and ecosystem health.

Soil Degradation

Currently, 33% of the world's land is moderately to highly degraded due to erosion, salinity, and desertification, impacting global food security and reducing crop yields by up to 50% in some regions.

Urbanization & Climate Change

By 2050, nearly 70% of the global population will live in urban areas, further stressing land and water resources. In addition, climate change is predicted to reduce global crop yields by up to 25% by 2050, increasing the strain on agricultural land..

Global Challenges - Why Change is Urgent



Irrigation Inefficiency

Up to 70% of water is wasted in traditional irrigation systems.



Soil Destruction

Soil degradation is accelerating due to erosion, salinity, and desertification.

Population Growth



Growing populations and expanding urban areas place immense pressure on agricultural systems and natural resources.



Traditional Farming Challenges



Inefficient Water Use

Requires frequent irrigation, losing up to 70% of water to evaporation and poor soil absorption.



Slow & Costly Soil Treatment

Conventional clay treatments take 7-15 years to show results and demand up to 100kg of raw material per m².



High Costs and Environmental Impact

Expensive and resource-intensive processes that degrade over time, requiring repeated applications.



Labor-Intensive

Highly intrusive methods require significant manual or mechanical labor, increasing operational costs and risks of human error.

www.soyl.ag

Introducing Liquid Natural Clay (LNC)

The Solution:

LNC is a patented, 100% natural solution, locally manufactured and applied on-site, that transforms sandy, arid soils into fertile, water-retentive landscapes in just a few hours.

How It Works:

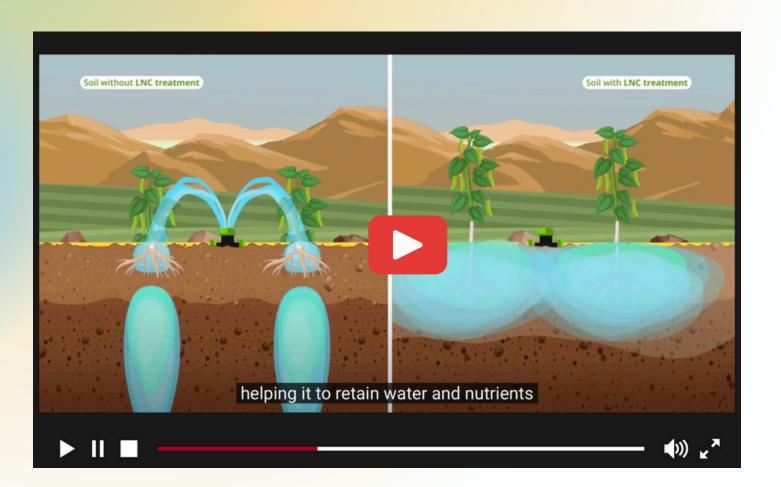
- LNC forms a sponge-like structure in the soil, retaining water and nutrients at the root level.
- One application lasts up to 5 years, saving up to 50% in water usage & boosting yeild upto 62%.



What is LNC?



Liquid Natural Clay (LNC) is a 100% natural, chemical-free mixture of water and industrial clay. It can be applied using existing irrigation systems, where it seeps into the soil, creating spongy structures at the root level. This allows for up to 50% water savings without the need for additional equipment.



AS SEEN ON







3 EASY STEPS



Apply directly to sand or arid soil to form a sponge-like structure



SAVE

Saves up to 50% water with a non-intrusive method

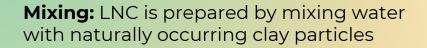


GROW

Increases crop yields by up to 62% & combats desertification

How Does It Work?





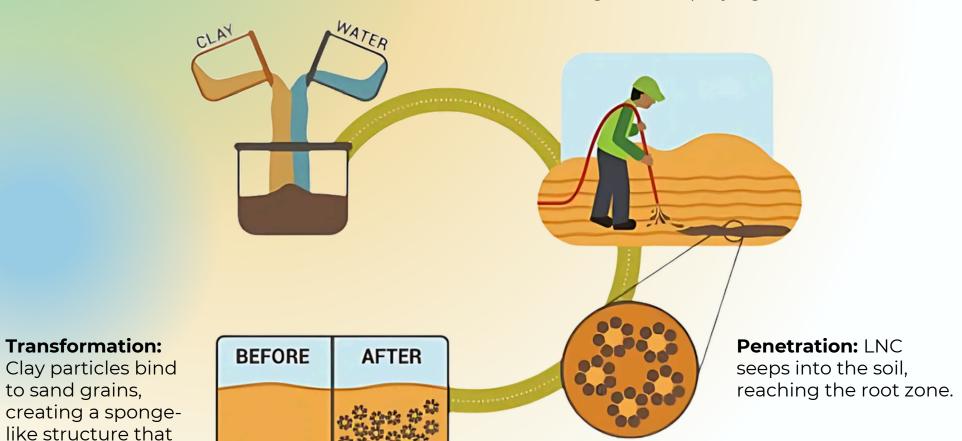
Transformation:

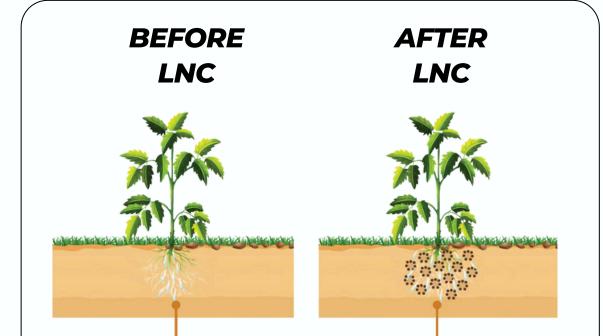
retains water and

to sand grains,

nutrients.

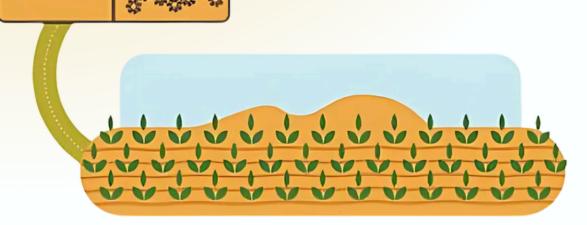
Application: The liquid LNC is applied to the target area using conventional irrigation or spraying methods.





Water and nutrients drain away from the plant roots in sandy soil.

LNC binds to sand particles, creating a sponge-like structure that retains water and nutrients at root level.



Results: Within 7 hours, the soil is transformed, ready to support healthy plant growth with reduced water requirements.

Why LNC is a Game-Changer



Water Savings

Reduce water usage by up to 50%, drastically cutting water costs and conserving this precious resource.



Yields & Energy

Reduce energy consumption by 15-25% by optimizing pumping requirements while increasing yeild by upto 62%.



Fertilizer

Save 15-20% on fertilizer costs while maximizing nutrient efficiency.



Maintenance

Extend equipment lifespan and reduce maintenance costs by 10-20%, saving you time and money.



Sustainability Impact

Achieve 15-30% carbon footprint reduction through improved resource efficiency and soil health.



Long-Term Soil Health

One application lasts up to 5 years, enhancing soil fertility and resilience while reducing future construction and operational expenses by 15-20%.









Global Support for LNC Technology

challenges. Collaborations with research centers, such as the University of Arizona and ICBA, validate its impact on agriculture, water conservation, and desert greening. Government bodies and sustainability leaders, including the Ministry of Climate Change & Environment and Masdar City, advocate for LNC as part of a greener future.













Wide-ranging Uses

LNC is a versatile and efficient solution that can be adapted to various industries and applications, paving the way for a more sustainable and greener future.



Agriculture & Forestry



Crop Production



Drought Mitigation



Soil Reclamation



Reforestation Support

Landscape & Communities



Urban Greening

Water

Conservation



Sustainable

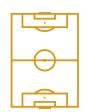
Landscaping

Dust Control

Sports & Resorts



Golf Courses



Sports Fields



Resort Landscaping

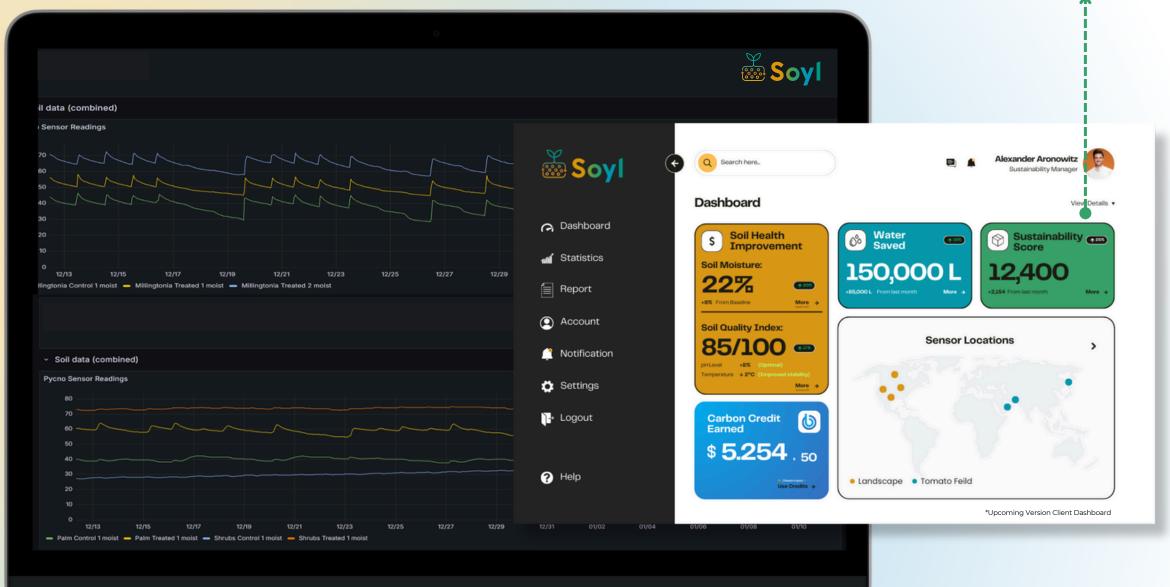


Water Management

SOYL DASHBOARD



Soyl's **Sustainability Score** dynamically measures a client's environmental impact based on key metrics such as **water saved, soil health improvement, carbon footprint reduction, and biodiversity impact**. By tracking real-time data, the score reflects tangible ESG progress, helping clients optimize resource use and enhance sustainability efforts.





- Real-Time Impact: Showcasing measurable improvements in soil health and water savings with LNC.
- Data-Driven Insights: Providing transparency on sustainability metrics and regeneration progress.
- Scalable Applications: Enabling visibility across sectors, from agriculture to urban landscaping.

LNC's Unique Advantages



Water Savings

LNC saves up to 50% water compared to traditional irrigation.



Fast Results

LNC improves soil within hours, while traditional treatments take months to years for noticeable results



Non-Intrusive Application

LNC requires minimal intervention, easily applied using existing irrigation systems.



Long-Term Impact

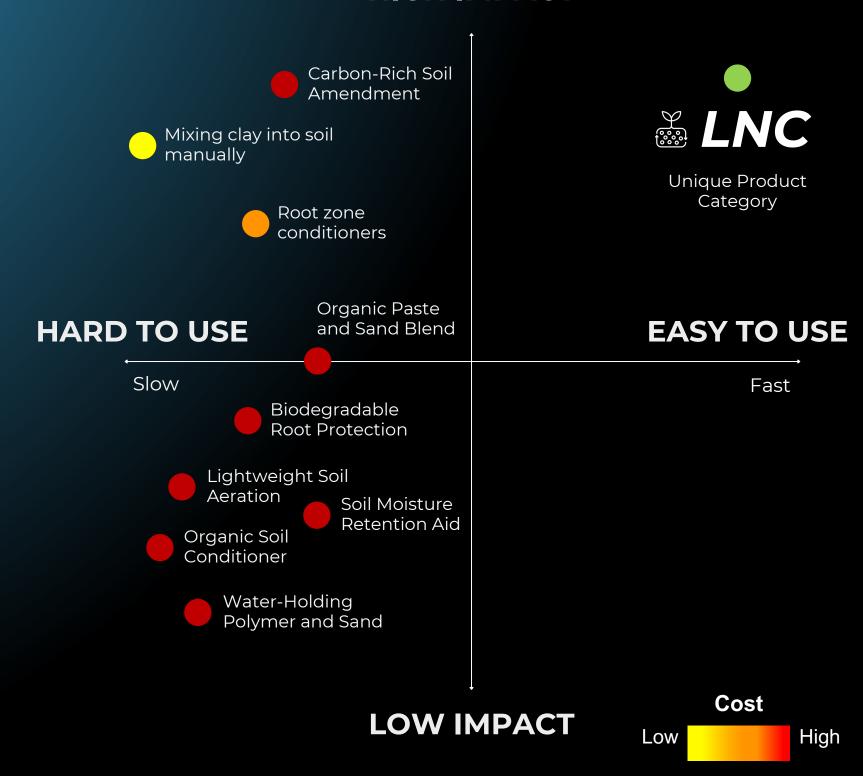
One LNC application lasts for up to 5 years, reducing the need for frequent reapplications.



Cost-Effective

LNC requires just 1/100th of the raw materials needed by traditional clay treatments, reducing long-term costs.

HIGH IMPACT







We've partnered with many organizations to solve their agricultural and landscaping challenges.





























CASE STUDY: PUMP TRACK, MASDAR CITY, ABU DHABI, UAE

SUCCESS STORIES





Client: Location:

Masdar City, Abu Dhabi Pump Track Park, Abu Dhabi

May 15, 2024 Date:



About the Project

Masdar City launched the region's largest pump track, a 7,500 square meter facility for bicycles, scooters, skateboards, rollerblades, and wheelchairs. It includes three tracks totaling over 500 meters, catering to all skill levels and people of determination.



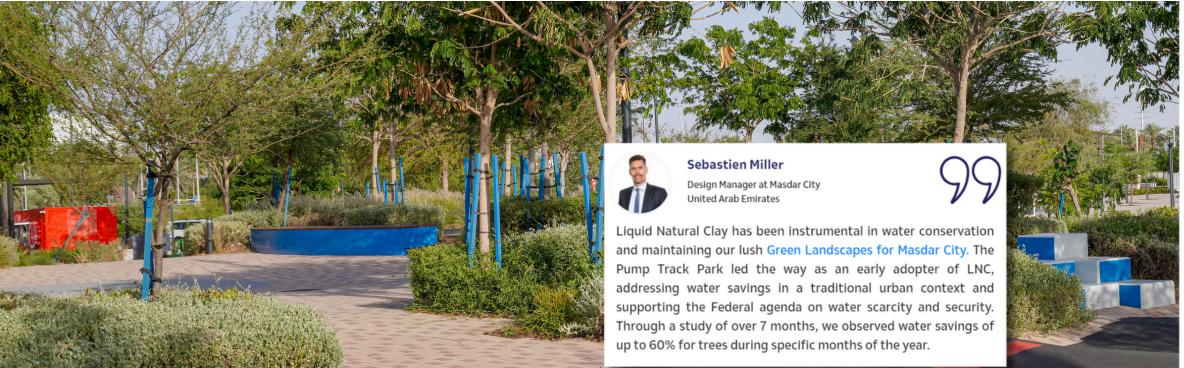
Project Scope

Masdar City has specified Nano Clay in all of their new and existing projects as a soil amendment to conserve water for all plants "Allow for "Nano Clay" or approved equal soil amendment". This aligns with the water-wise approach of the Velosolutions pump track, which utilized recycled materials and LNC from Mawarid Desert Control.

THE RESULTS

LNC was used in constructing the region's largest pump track. An 7month monitoring study with live soil moisture tracking showed an overall water savings average of **60%.** This project, highlighted by Masdar on several occasions, demonstrates LNC's effectiveness in large-scale applications and its significant water conservation potential.





MASDAR CITY OPENS THE REGION'S LARGEST PUMP TRACK, FEATURING SUSTAINABLE **MATERIALS**



CASE STUDY: LNC PROJECT AT ICBA, DUBAI, UAE



Liquid Natural Clay (LNC) is revolutionizing **agriculture sustainability** by enhancing **soil quality, improving water retention, and increasing nutrient efficiency**. Conducted at the **International Center for Biosaline Agriculture (ICBA)** in Dubai, UAE, the trial evaluated LNC's impact on **crop yield, water use efficiency, and nutrient use efficiency** under sandy soil conditions.







Background & Objectives

- Conducted in collaboration between Desert Control & ICBA
- Objective: Validate LNC's effectiveness in improving soil quality, water retention, and agricultural productivity in sandy desert conditions
- Trial Period: March 2020 September 2020
- Scope: Applied LNC on Bermuda grass, pearl millet, watermelon, and zucchini to assess water savings, crop yield, and soil fertility

Breakdown by Crop Type

	Crop	LNC Application Rate	Yield Increase (%)	Water Use Efficiency (%)	Nutrient Use Efficiency (%)
	Pearl Millet	1.5%-2.5% LNC	+28%	+27.7%	+39%
	Watermelon	2.5% LNC	+17%	+16%	+26%
	Zucchini	1.5% LNC	+62%	+61%	+63%
West	Bermuda Grass	1.2 kg LNC injected & sprayed	Double biomass growth (1,081 g/4m ² \rightarrow 2,259 g/4m ²)	+47% water savings	Improved soil phosphorus & potassium levels

Evaluation Metrics



Soil Health



Water & Nutrient Retention



Irrigation Efficiency

Key Findings from **Turf & Bermuda Grass Trial**



Bermuda Grass as a Climate-Resilient Species

- Thrived in **UAE summer conditions**, unlike turf grass which failed
- LNC-treated plots had up to 47% water savings while achieving higher biomass production



Soil Salinity & Nutrient Balance Improvements

- Significant decrease in topsoil salinity observed in treated plots
- Increased available phosphorus (P) & potassium (K), enhancing nutrient uptake
- Organic matter content improved, boosting soil fertility



Water Use Efficiency Gains

- LNC-treated plots retained nearly twice as much soil moisture
- 30%+ confirmed water savings with ETbased irrigation schedules



Boosted Biomass Production

 1.2 kg LNC injected with fungi doubled biomass growth, from 1,081 g/4m² to 2,259 g/4m²

Key Findings from **Agricultural Crop Trial**



Yield Improvement Across All Crops

- Pearl Millet: +28% yield increase
- Watermelon: +17% yield increase
- Zucchini: +62% yield increase



Water & Nutrient Efficiency Gains

Water Use Efficiency (WUE):

- Pearl Millet: +27.7%
- Watermelon: +16%
- Zucchini: +61%

Nutrient Use Efficiency (NUE):

- Pearl Millet: +39%
- Watermelon: +26%
- Zucchini: +63%



Impact of LNC Application & Production Methods

- 1.5% LNC concentration **yielded better** efficiency than 2.5% for Pearl Millet
- Zucchini responded best to 1.5% LNC (+79% yield increase with mycorrhiza)
- Watermelon performed better with 2.5% LNC (+24% increase with mycorrhiza)



LNC Production & Application Methods Matter

- Large-scale inline mixing method performed better than semi-automated mixing
- LNC spray application into soil improved yield by 52% compared to control

OVERALL IMPACT & NEXT STEPS

- LNC significantly improved soil fertility, water retention, and crop productivity in desert conditions
- Confirmed ability to reduce irrigation demand while boosting plant resilience
- Findings support large-scale adoption in landscaping & agriculture

POTENTIAL NEXT STEPS WITH ICBA

- Expand Trials: Test additional crops & soil types over extended periods
- Long-Term Monitoring: Measure multi-year sustainability impact
- **Scale Implementation:** Pilot LNC in commercial farms & green infrastructure projects

SUCCESS STORIES: BEFORE & AFTER LNC

KHALIDIYA

PARK

AFTER

AFFORESTATION PROJECT



MASDAR (6)

CLIENT: **Trump International** Golf Club, Dubai

PLANT/CROP TYPE: **Paspalum grass**







RESULTS:

Water Saved on Lawns

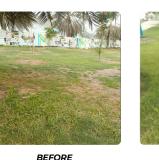


AFTER

Water Saved on Shrubs & Trees

Al Khalidiya Park, **Abu Dhabi**

PLANT/CROP TYPE: **Paspalum grass**



RESULTS:

Water Saved on Lawns

CLIENT: Private site. **Dubai**

PLANT/CROP TYPE: Paspalum grass





PRIVATE

SITE

AFTER

RESULTS:

REFORE

Water Saved on Lawns

CLIENT:

ICBA - UAE Adaptive Agriculture Reference Validation

PLANT/CROP TYPE: Watermelon, Zucchini & **Pearl Millet**



BEFORE

Yields

RESULTS:

Water & Fertilizer

20-50 %

COICBA





savings

ΔFTFD

Increased Crop

17-62 %

AFFORESTATION

PROJECT

AFTER

RESULTS:

Water Saved on Shrubs

Pump Track, Masdar

City, Abu Dhabi

Mixed Landscape

BEFORE

PLANT/CROP TYPE:

Water Saved on Trees

ΔFTFD

CLIENT: Alfalfa Crop. **Forage**

PLANT/CROP TYPE: **Alfalfa**



Water Saved on Crops

RESULTS:

Increase in Crude Protein

PRIVATE



AFTER

Trees

Water Saved on Trees

PLANT/CROP TYPE: **Christ's Thorn Jujube Trees**

Ziziphus Spina Christi



BEFORE

RESULTS:

CLIENT: **Desert fruit tree** cultivation PLANT/CROP TYPE: **Mixed varieties**



BEFORE

RESULTS:

Water Saved on Trees

CLIENT: **Prosopis**

cineraria PLANT/CROP TYPE: **Ghaf tree**



CITRUS TREES

PROJECT

RESULTS:

Water Saved on Lawns

BEFORE

CLIENT: Punica granatum

PLANT/CROP TYPE: Pomegranate





DESERT

FRUIT TREE

CULTIVATION

RESULTS:

BEFORE

Water Saved on Lawns

Global Impact & Local Manufacturing



UAE-manufactured

LNC is locally manufactured by Soyl in the UAE with global implications, leading efforts to combat desertification and support water conservation globally



Local Commitment

The group's high ICV scores highlight LNC's local value to UAE's sustainability goals.



Global Reach

LNC is already transforming landscapes from the UAE to the U.S., proving its adaptability to different climates and industries.

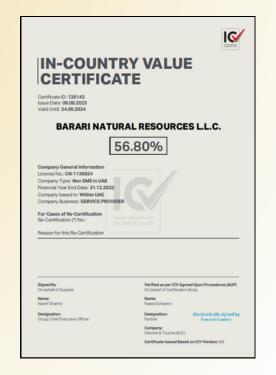


Certifications





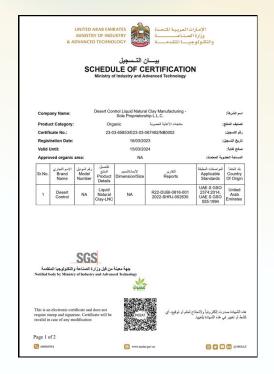


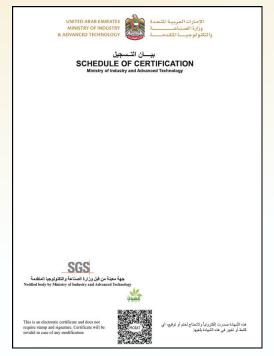




















About Us

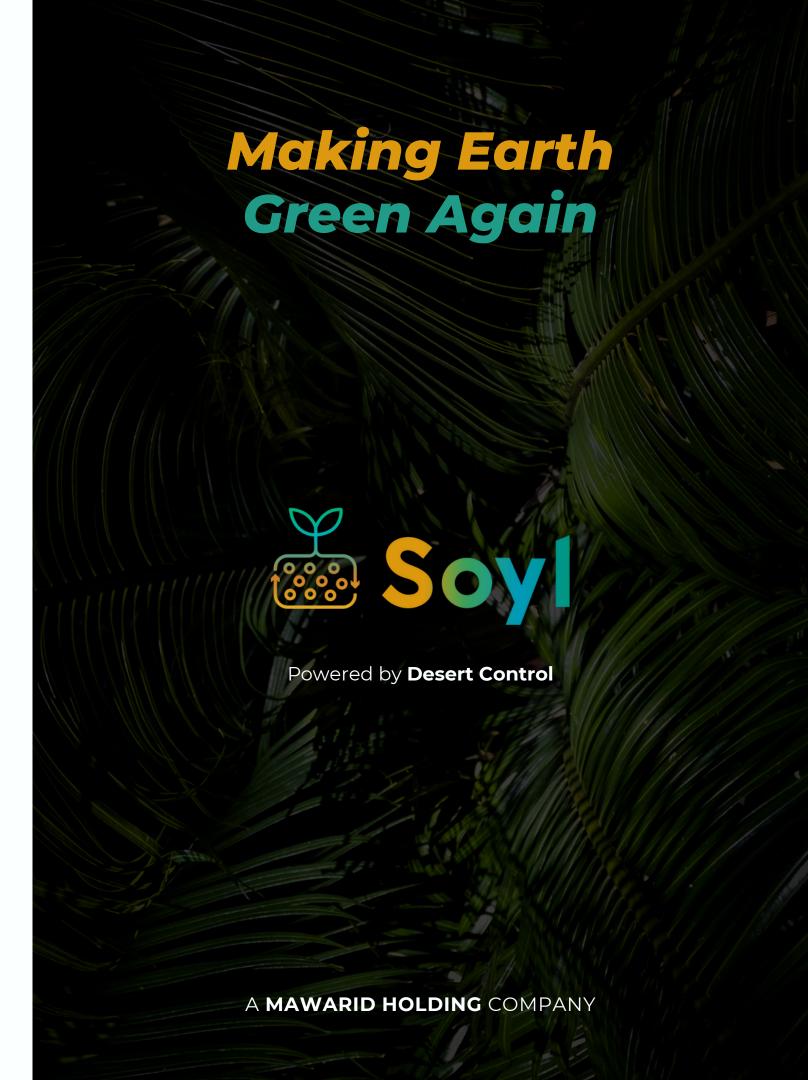








At Soyl, we don't just work with soil—we revolutionize it. Powered by Liquid Natural Clay (LNC) technology, we turn dry, barren land into fertile grounds ready for growth. Cut water usage in half, boost yields, and create a sustainable ecosystem that lasts.



What we believe in





Healthy Soil: At the foundation of Soyl's innovation is Liquid Natural Clay (LNC), which transforms arid soils into fertile ground.

LNC: This technology ensures the soil retains water and nutrients, creating optimal conditions for plant growth.

Healthy Growth: The result is vibrant, sustainable plant life, enhancing agriculture and landscapes while conserving resources.

Soyl

Healthy, thriving soil is the foundation of a **sustainable future.**

SUSTAINABILITY

Regenerative soil practices ensure the long-term health and abundance of our planet.

YIELD

Bountiful harvests are the result of nurtured soil using less water providing food security.

→ **OPTIMIZATION**

Optimizing soil health unlocks the full potential of the land, maximizing yields & resource efficiency.

LEGACY

Healthy soil is a gift to future generations, ensuring a thriving planet for years to come.

Reach out to us



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