

SEPTEMBER 2023

S O M A Radical  
Transparency  
M A T E R



# What Are the Future Foods of the UAE?

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Part I

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# Introduction

The United Arab Emirates has embarked on a transformative journey towards localizing its food production. This strategic shift is driven by several key factors, including the need for food security, environmental sustainability, and economic diversification. Recognizing the vulnerability of relying heavily on food imports, the UAE has taken proactive steps to establish a self-sufficient and resilient food system within its borders. As a result, the country has launched numerous ambitious projects aimed at enhancing domestic agricultural production and reducing its dependence on foreign food sources.

The UAE's commitment to environmental sustainability plays a vital role in driving its localization efforts. The country recognizes that importing food from distant locations entails the release of significant carbon emissions due to transportation and storage. Through promoting local agriculture, the UAE aims to reduce its ecological footprint and contribute to global efforts in mitigating climate change. Moreover, localized food production presents opportunities for implementing innovative and sustainable farming practices, such as vertical farming, hydroponics, and precision agriculture which can minimize resource usage and enhance efficiency.

# Wheat

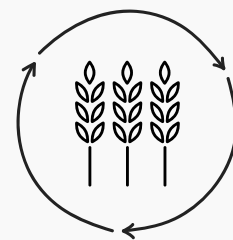
The golden grain driving sustainable production

In line with the UAE's journey towards sustainable local food production, several projects and strategies were put in place recently, such as the Sharjah Wheat Farm. In 2022, the wheat farm in Mleiha, Sharjah, was launched with the aim of providing and meeting food demands, as well as raising the production rate to meet Sharjah's needs. This project aims to meet its objectives in three phases.

The first phase of wheat cultivation covers an area of 400 hectares, the second phase will cover an area of 880 hectares, and the third and final phase targets to cover 1400 hectares of land in 2025.

Within a span of just four months, the previously barren desert land has undergone a remarkable change:

Evolving into a green oasis that yields approximately 1,700 tonnes of wheat.



The transformation showcases the tremendous potential of reclaiming arid landscapes and harnessing their productivity through strategic agricultural interventions.

# Quinoa

## Revolutionizing modern nutrition



After years of dedicated research and development in the UAE, the International Center for Biosaline Agriculture (ICBA) is actively collaborating with local farmers to introduce quinoa varieties that have displayed exceptional performance during trials under local conditions. Quinoa, renowned for its extraordinary genetic diversity, resilience, and adaptability to difficult environments, exhibits the capacity to thrive in saline soils with minimal annual rainfall.

Beyond its market value, this crop boasts an impressive nutritional profile, being highly nutritious, gluten-free, and rich in essential amino acids and vitamins. Since 2016, ICBA scientists have joined forces with local partners to carefully select and distribute quinoa seeds among 12 visionary farmers across the emirates of Abu Dhabi, Ajman, Sharjah, and Fujairah.

In Sharjah, where high salinity levels and depleting groundwater pose challenges for agricultural operations, farmers began cultivating quinoa in February 2018. These pioneering farmers anticipate harvesting yields of up to 2.2 tonnes of grain per hectare, thus showcasing the viability and potential of quinoa as a lucrative and sustainable crop option in the region.

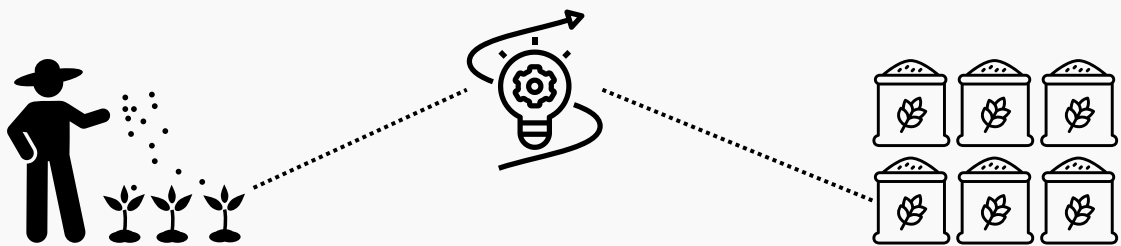
# Rice

## Feeding billions and shaping cultures

The cultivation of rice is known for its demanding requirements, typically necessitating specific conditions and flooded paddies. However, in a remarkable endeavor, a team of scientists in the UAE is harnessing the power of cutting-edge technology to transform the arid deserts of Sharjah into arable land capable of nurturing this vital global staple.

As a proactive response to food security concerns, these local scientists have achieved a breakthrough by successfully growing an impressive 763 kilograms of rice within a compact 1,000 square meter plot of desert, utilizing innovative techniques.

Following rigorous testing, specialists have chosen the Asemi (Japonica) and FL478 (Indica) rice varieties for cultivation due to their exceptional resilience in the face of challenging environmental factors such as high temperatures, salinity, and unfavorable soil conditions.



# Blueberries

Nature's antioxidant powerhouse



Furthermore, an Emirati company based in Abu Dhabi has recently expanded its export operations, bringing its popular locally-grown blueberries to new markets, including Japan, Thailand, India, and Cambodia.

Elite Global Fresh Trading (EGFT), a subsidiary of Yas Holding's agriculture division Elite Agro Holding (EAG), is widely recognized as a leading producer and trader of premium quality farm-fresh produce grown sustainably.

EAG holds the distinction of being the largest and pioneering producer of blueberries in the UAE, as well as the first Emirati company to successfully export to stringent markets like Japan, which demand rigorous certifications for high-quality products. The export of their renowned 'Elite Berry' brand commenced this month and will continue until the end of May.

Looking ahead to 2024, the company plans to extend the export season from January to May and explore new export opportunities, supported by the expansion of production at EAG's local farms, which prioritize sustainable farming practices.

# Potatoes

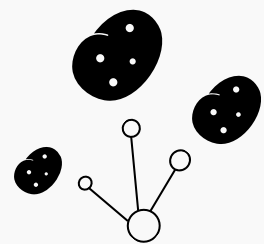
## Extraordinary journey from farm to fork

As a prominent producer and distributor of fresh produce in the UAE, EAG are proud to introduce locally-grown, freshly harvested white and purple potatoes to the market.

Through innovative and sustainable farming practices, EAG anticipates reducing carbon emissions by a significant 468 tons, according to an IMO GHG Study, in comparison to the carbon footprint associated with commonly imported potatoes and their transportation.

EAG is currently in the midst of potato season. Their expansive open farm spanning 210 hectares in Nahel, Al Ain, yields an impressive harvest of up to 8,400 tons of potatoes.

Since 2014, their farm has nurtured three distinct potato varieties, namely Spunta, Naima, and Universa.



This year, they have proudly introduced a highly versatile and entirely new potato variety known as Sifra, marking its inaugural cultivation on the renowned Nahel Farm.



# Salmon

The ocean's protein favorite



Moreover, UAE's supermarkets and restaurants rely entirely on imported salmon, with only a mere 8 percent of the country's total fish coming from local waters.

Hence, Fish Farm's endeavor to introduce locally-grown salmon to UAE's restaurants and supermarkets marks a significant stride towards achieving the nation's food security objectives.

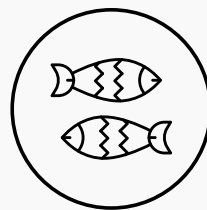
Starting in 2020, Fish Farm, based in Jebel Ali, will commence the sale of the UAE's first homegrown salmon, as the eggs from their existing stock have already hatched, and the young fish are currently being nurtured to reach a market-ready weight of at least three kilograms.

# Oysters

## Culinary delicacy and ecosystem engineer

While often associated with environmental concerns, aquaculture is considered to have a positive ecological impact when it comes to oyster production. Oysters have a long-standing connection with the history and traditional culture of the UAE, particularly due to their association with pearl production.

In line with this cultural significance, Dibba Bay Oysters farm in Fujairah has recently obtained the esteemed Friend of the Sea Sustainable Aquaculture certification through the program administered by the World Sustainability Organisation based in Italy.



The farm's notable environmental contribution lies in its ability to locally supply oysters to the UAE market, thereby reducing the need for imports. With approximately 35 percent of the oyster market share in the Emirates, Dibba Bay Oysters stands as the sole oyster farm of its kind in the Middle East, cultivating Pacific oysters, which originally come from Japan.

Presently, the farm produces between 300,000 to 400,000 oysters each month, with the potential to increase production to an impressive 800,000 oysters per month.

# Kama Truffles

A hidden gem of flavor and aroma

Desert truffles, a lesser-known but cherished delicacy in Emirati cuisine, belong to the fungi family known as Terfeziaceae and are referred to as 'fagha' or 'kama' in Arabic.

These unique truffles emerge following the rare occurrence of rain and thunderstorms in the desert. They hold significant cultural importance in Emirati society and possess distinct harvesting methods.

While they can be visually detected with relative ease, gathering desert truffles can be a demanding task as it entails traversing extensive stretches of the desert landscape. In a notable initiative, Abu Dhabi launched a truffle cultivation project under the ownership of Al Sidaira Agricultural Establishment.

The initial phase of the project involved the cultivation of 25,000 saplings.

Successful planting and harvesting would pave the way for the project's expansion and the eventual exploration of export opportunities for these prized fungi.

# Salicornia

## The green gold of the sea

Thriving in the challenging desert farms of the UAE, a resilient plant cultivated using salt water exemplifies the potential of sustainable agriculture in the harshest environments. Known as Salicornia, this salt-tolerant plant goes by various names such as pickleweed, sea beans, or sea asparagus.

Notably, Salicornia boasts a high protein content and can be consumed raw as a salad or served as a flavorful side dish. Beyond its culinary merits, this crop holds significant commercial value due to its potential as a biofuel source and animal forage. Its utilization as a salt substitute in burger patties has already proven to be a farming triumph in the UAE.

Pioneering research conducted by scientists at the ICBA has resulted in a remarkable achievement: a bumper seed yield of 3 tonnes per hectare using seawater passed through an aquaculture system. This groundbreaking feat marks the first time Salicornia has demonstrated such exceptional productivity under UAE's unique conditions.

# Mushrooms

## Fascinating fungi, a savory secret

Despite the moist and dark growth requirements essential to mushrooms, the Below Farm in Al Rahba, Abu Dhabi has innovated a sustainable, technology-driven approach to producing homegrown mushrooms in the UAE's arid climate.

Abu Dhabi's hot and dry desert stands contrary to the temperature requirements of mushrooms, i.e. 10-25°C, alongside moist soil and humid surroundings. The Below Farm uses an indoor vertical farming technique that is independent from its surroundings; it requires minimal water and no arable land. In fact, an end-to-end data monitoring system uses machine-learning to develop and maintain optimal growth conditions for their mushrooms.

The mushrooms are grown on compressed and sterilized blocks made of sustainable materials such as local waste wood, palm frond cuttings, and wheat bran. Mycelium, a compound that serves as the culture for mushrooms to grow, is then added to these blocks before stacking them in air-conditioned rooms. Once grown, the mushrooms are picked by hand and transported in recyclable boxes to the Below Farms five-star clientele.

Impressively, the blocks used to grow the mushrooms are reusable, repurposable as fuel and/or fertilizer, and compostable. This technique has proven extremely successful as the Below Farm now produces six premium varieties of mushrooms including pink oyster, shiitake, and lion's mane, amounting to 120 tonnes annually.

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SOMA MATER CONSULTANCIES  
THE BINARY TOWER, OFFICE 1804,  
BUSINESS BAY – DUBAI, UAE

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CONNECT@SOMAMATER.COM  
WWW.SOMAMATER.COM

