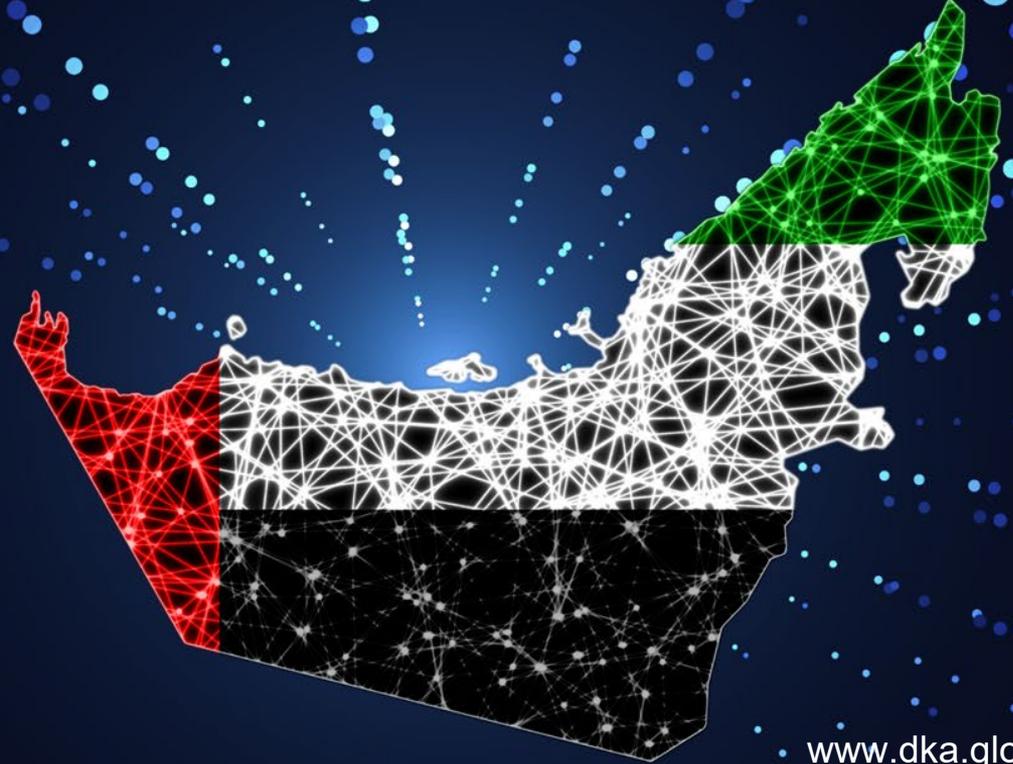


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مجمع الشارقة للبحوث
والتكنولوجيا والابتكار
Sharjah Research Technology
and Innovation Park



AgriTech in the UAE Industry Landscape Q3 2022 *Teaser*



July 2022

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AgriTech in the UAE Industry Landscape Q3 2022

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Introduction

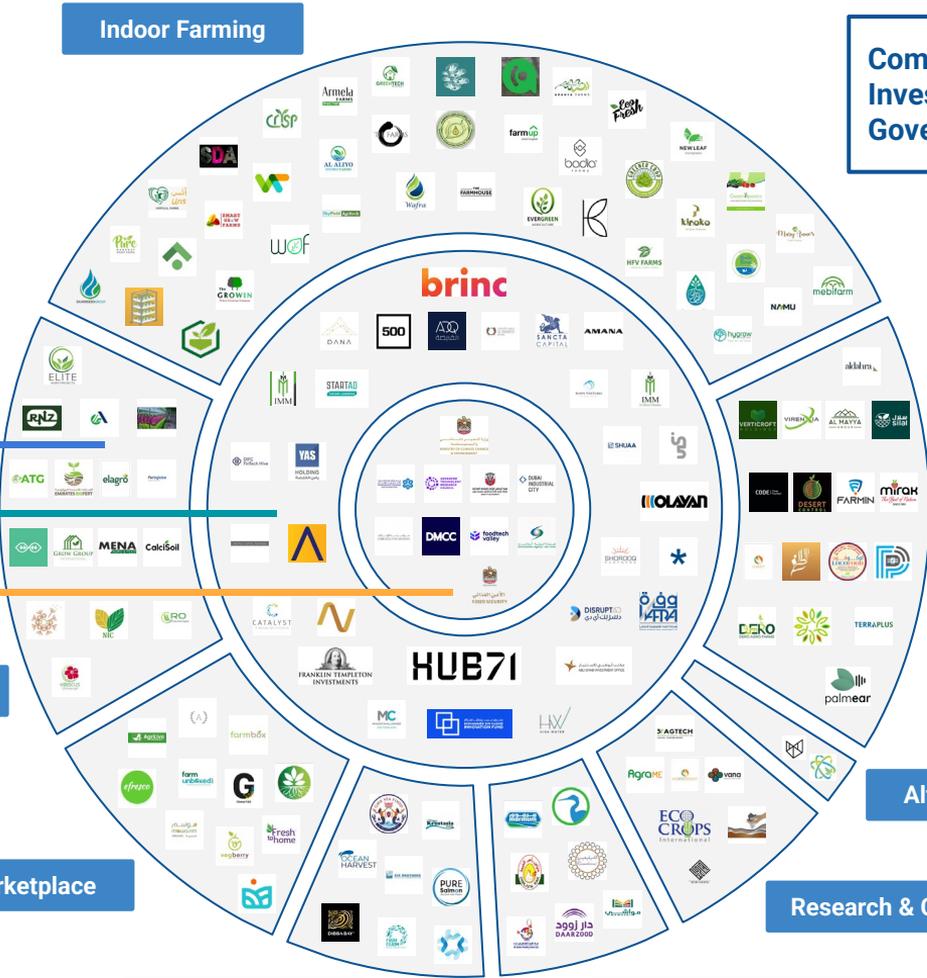
AgriTech in the UAE Industry Landscape Q3 2022 summarises vital observations in the AgriTech ecosystem of the UAE, a rapidly evolving and growing industry. Based on the assembled and analysed data, the report reveals vital features, trends, innovations, technologies, and market size, among other perspectives. **The analytics of the report are based on information about 150 organisations, including 100+ companies selected by sector, 30+ investors, 10 Government Agencies & Hubs.**

Our report offers a wealth of valuable information and analysis on the major opportunities, challenges, and trends that are currently shaping the AgriTech sector. Drawing on extensive research across a variety of primary and secondary sources, this comprehensive report provides unique insights into topics investments in the UAE's AgriTech sector, product innovations, automation, food security initiatives, and much more.

Why is AgriTech crucial for the UAE? The UAE currently imports more than 85% of its food, and events such as the pandemic have demonstrated that improving food security is a priority. The country's government has been quick to recognise its importance and has acted decisively to push towards more self-sustaining practices. Now, the UAE aims to harness the innovation and export it to the world.

**AgriTech in the UAE
Industry Landscape
Q3 2022**

**Companies: 100+
Investors: 30+
Government Agencies & Hubs: 10**



Companies

Investors

**Government
Agencies & Hubs**

Agri Inputs

AgMarketplace

Aquaculture

Livestock & Poultry

Precision Agriculture

Alternative Farming

Research & Consultancy

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Sharjah Research Technology
and Innovation Park

Report Methodology and Approach

Database

100+

Companies

30+

Investors

10

Government
Agencies &
Hubs

8

Subsectors

Data Sources*

Media
Overview

Industry
Specialised
Databases

Publicly
Available
Sources

Industry
Reports and
Reviews

Applied Research and Analytics Methods*

Descriptive
Analysis

Mixed Data
Research

SWOT
Analysis

Comparative
Analysis

Qualitative Data
Collection

Data
Filtering

Containing a comprehensive overview of the AgriTech Industry in the UAE, the report relies on various research methods and analytics techniques. Deep Knowledge Analytics is not responsible for the quality of the secondary data presented herein; however, we do our best to minimise possible risks by cross-checking data and using different analytics techniques. Please note that we did not deliberately exclude certain companies from our analysis due to the data-filtering method used or difficulties encountered. In fact, the main reason for their exclusion was incomplete or missing information in the available sources.

The Global Challenges

Increased Food Consumption

The world's population is expected to grow to almost 10 billion by 2050, boosting agricultural demand by 50% compared to 2013¹.

Rising living standards are also resulting in a higher consumption of meat, fruits, and vegetables, which are more costly to produce than cereals and grains.

Climate Change

Agriculture both contributes to, and is affected by, climate change.

Agriculture currently accounts for 70%² of water use and the world's food systems are responsible for more than one-third of global anthropogenic greenhouse gas emissions³.

Food Waste

1/3 of food produced globally is either lost or wasted.

This amounts to about 1.3 billion tons per year, worth approximately \$1 trillion.

In developing countries, 40% of losses occur at post-harvest and processing levels.⁴

Without expanding agricultural frontiers at the expense of technology it is impossible to meet the future demand for food. The UAE's AgriTech plans help meet the global food challenge, driving down costs and showing which technologies work.

Executive Summary

The AgriTech market has developed into a robust ecosystem in recent years. The start-up developed solar, cooling, and AI-led monitoring technologies, enabling them to grow food using saltwater, rather than freshwater, as the primary input.

The UAE considers food security to be essential to the security and wellbeing of its citizens and residents. In 2018, the UAE launched its National Food Security Strategy to increase production by 30-40% in 10 years.

In the UAE, about 36% of the AgriTech market belongs to the Indoor Farming subsector. The second and the third biggest types are Precision Agriculture and Agri Inputs, with a 15.9% and 15.0% share, respectively. 65% of AgriTech companies are micro-sized enterprises with fewer than 50 employees.

The UAE's plan is for half the food consumed in the Emirates to be produced locally by 2051, compared to 20% today. While the UAE's production might account for a tiny percentage of global agricultural production, the implications of this plan go well beyond national borders. The transference of technologies from temperate regions to regions closer to the equator has historically been limited due to the drastic differences in agro-climatic conditions.

Key Figures and Facts

36%

of market covered
by Indoor Farming

65%

of companies are
micro-sized
enterprises

66

companies
addressing
sustainability

\$0.6B

invested in UAE-based
companies in 2021

66%

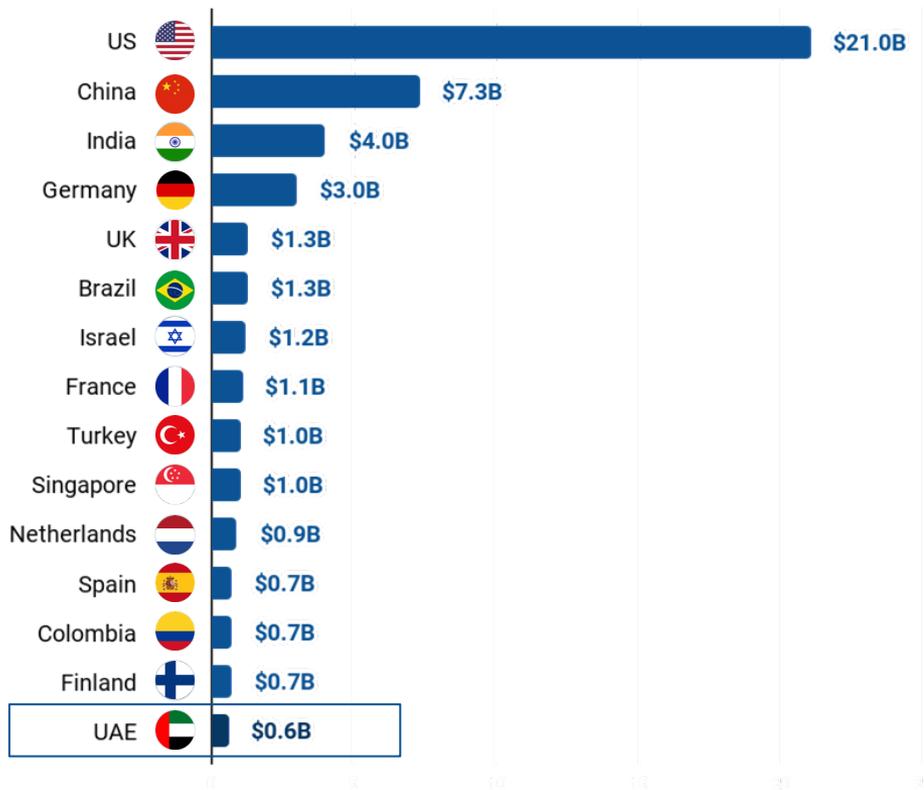
are UAE-based
investors

\$22.6B

projected global
AgriTech market size

Global AgriTech Industry Overview

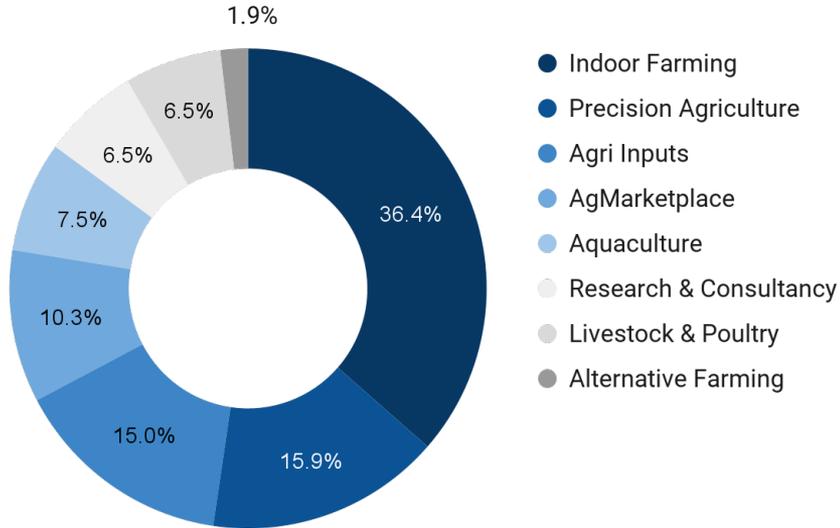
Top 15 Countries by Investment in 2021¹



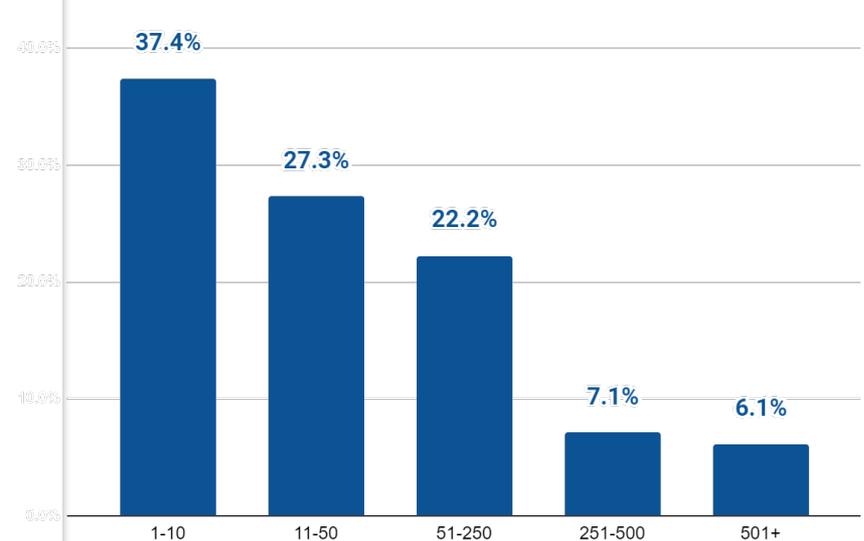
- The UAE closed 22 investment deals in 2021 with a total value of \$0.6 billion, which ranks 15th of all countries worldwide.
- US-based companies accounted for 41% of investment capital and 34% of deals.
- Of the \$7.3 billion raised by Chinese AgriTech ventures, 75% went to the e-grocery category.
- India is home to more than 450 AgriTech start-ups, growing at a 25% CAGR, with FarmTech having emerged as vital to the future of Indian agriculture and food systems.
- Israel's cultivated meat start-ups were particularly successful in raising capital, attracting the highest amount of funds.
- Germany overtook the UK as the top AgriFood investment market in Europe. Some 70% of the \$3.3 billion raised went to just two companies: instant-grocery delivery start-ups Flink and Gorillas.

The State of the UAE's AgriTech in 2022

Share of AgriTech Companies by Subsector¹



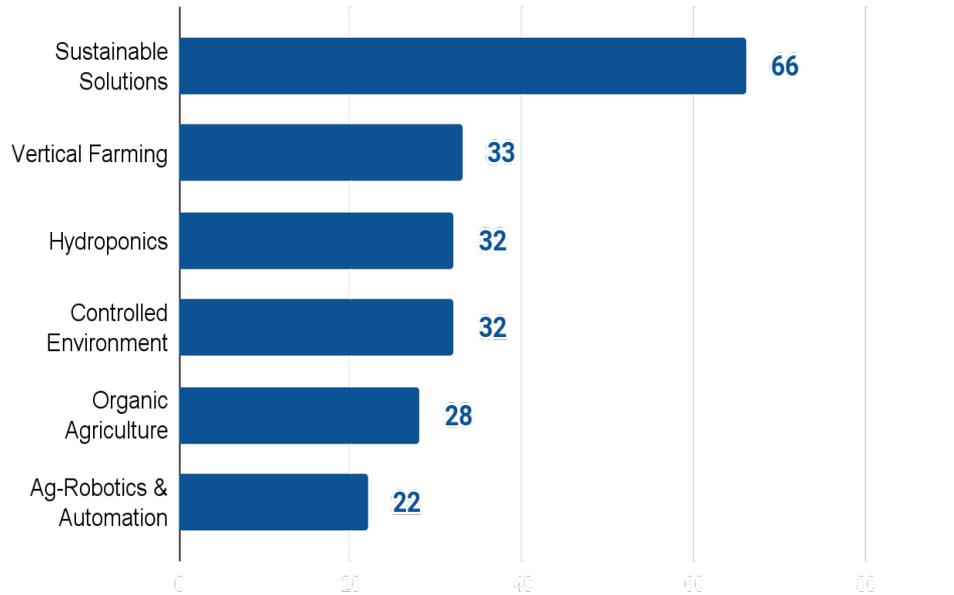
Breakdown of AgriTech Companies by Number of Employees¹



Indoor Farming is the largest category, comprising 36.4% of all analysed companies. This subsector includes such companies as [Aranya Farms](#) and [Merlin Farms](#) aiming to produce agricultural products indoors. The second and the third biggest types are Precision Agriculture (e.g. [Verticroft](#) and [Silal](#)) and Agri Inputs (e.g. [RNZ International](#) and [MENA Agro and Feed](#)), with a 15.9% and 15.0% share, respectively. According to research, 65% of AgriTech companies are micro-sized enterprises with fewer than 50 employees.

The State of the UAE's AgriTech in 2022

Focus of AgriTech Companies, # of Companies^{1,*}



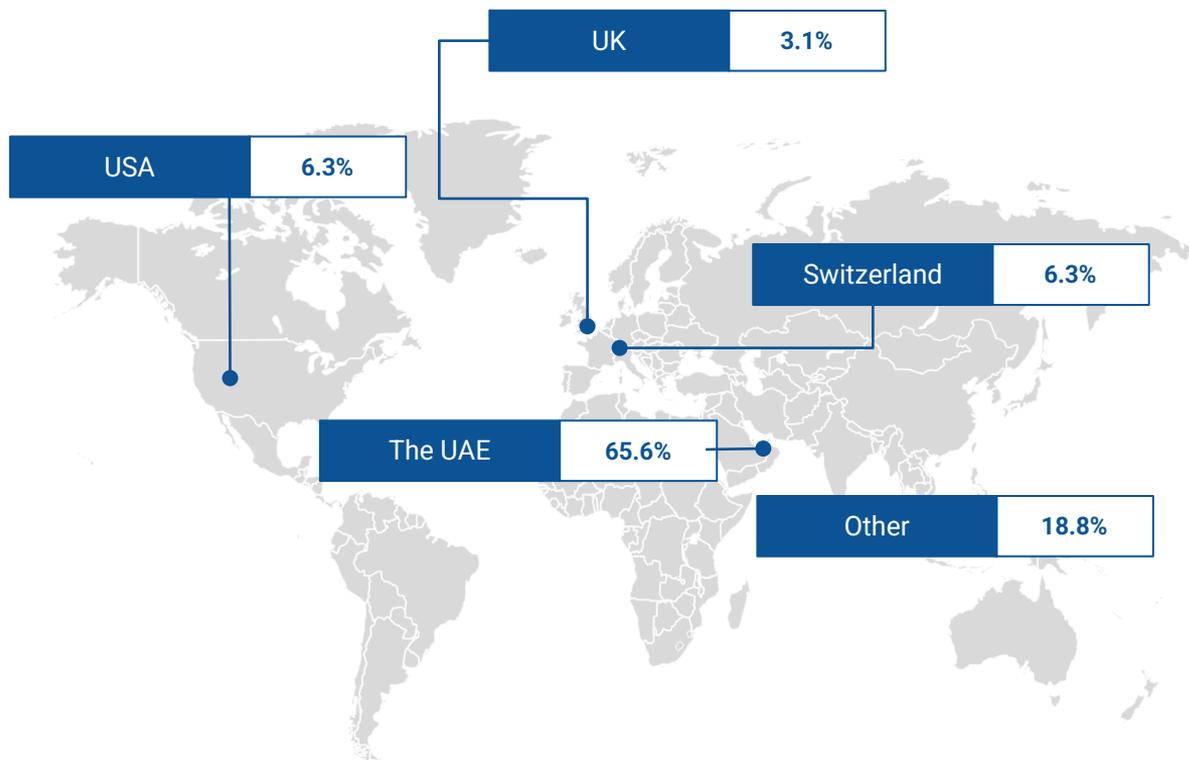
Technologies and Solutions Used in AgriTech

Vertical Farming	Hydroponics	Ag-Robotics & Automation
Artificial Intelligence	Blockchain	Remote Sensing
Intelligent Data Analysis	Internet of Things	Machine Learning
BioTech	Real-Time Cameras	Hydro Membrane Film
Fogponics	Audio Engineering	Satellite Imagery

Sustainability is under the spotlight for UAE start-ups: 66 companies address technologies to reduce food waste and greenhouse gas emissions. The UAE has the potential to be a major player in the vertical farming space because of its climate and the government support for such AgriTech innovations.

AgriTech Investors in the UAE

Investors by Countries¹



The UAE's favourable climate and infrastructure make it an ideal location for AgriTech companies, and the government is supportive of the sector through initiatives such as the Dubai Industrial Strategy 2030. With a strong foundation in place, the AgriTech sector is poised for continued growth in the coming years.

The AgriTech sectors show the inherent prevalence of the UAE investors' share in terms of investor representation. Currently approximately 66% of investment into the UAE AgriTech companies comes from the UAE-based investors. The three other significant investor countries are the USA, Switzerland, and the UK.

The rest of the investment comes from Kuwait, Saudi Arabia, and the Asia and Pacific (APAC) region.

Government Initiatives

Appointment of the Minister of State for Food Security



with the aim of increasing domestic food production by 30% and giving the local food processing industry the ability to triple output.

\$100 Million Investment by Abu Dhabi Investment Office²



to bring four agriculture technology companies to the Emirates (AeroFarms, Madar Farms, RNZ, and RDI).

Launch of the National Food Security Strategy 2051¹



to achieve zero hunger by ensuring access to safe, nutritious, and sufficient food all year round throughout the world and implement resilient agricultural practices that increase productivity and production.

Establishment of the AgriTech Sector Development Team



public and private sector stakeholders from the agricultural technology sector. The team's vision is to see the success of groundbreaking AgriTech projects, one example being growing rice in the Sharjah desert.

National Food Security Strategy

National Food Security Strategy

Launched in 2018 to increase production by 30-40% in 10 years.

Vision

Becoming a world leading hub in innovation-driven food security by 2051.

Strategic Directions



Facilitate global agribusiness trade and diversify international food sources;



Reduce food loss and waste;



Enhance sustainable technology-enabled domestic food supply across the value chain;



Enhance capacity to respond to food security risks and crises;



Sustain food safety and improve nutritional intake.

Key Objectives to Achieve Food Security:

- Make the UAE the world's best in the Global Food Security Index by 2051.
- Develop a comprehensive national system based on enabling sustainable food production through the use of modern technologies.
- Enhance local production: The UAE's plan is to have half of the food consumed in the Emirates produced locally by 2051, compared to 20% today¹.
- Develop international partnerships to diversify food sources.
- Activate legislation and policies that contribute to improving nutrition.
- Activate legislation and policies to reduce waste.

The Russian invasion of Ukraine and almost 4 months of war have disrupted global food supplies, exposing the fragile state of food security across much of the Middle East and North Africa. **Thanks to this strategy, the UAE still imports 80% to 90%² of its food.**

Four Trends Shaping AgriTech Growth in 2022

Hydroponics and Vertical Farms

Minimal water usage is a benefit for this region, along with the ability to control the environment using the right equipment. Hydroponics and vertical farms enable year-round operation.

Alternative Crops

Sea asparagus, for example, is rich in nutrients and can quite easily be grown here. A couple of companies in Dubai are already starting to explore the potential.

Greening the Desert

Dubai-based AgriTech start-up Desert Control's revolutionary liquid natural clay technology that transforms deserts into fertile land is set to transform the agriculture sector in the Middle East and beyond.

Alternative Proteins

The UAE has already made significant progress in this area, with a number of companies working on developing plant-based meat and other alternative proteins. The UAE is also investing in research to develop new methods of producing protein.

Cutting-Edge Technologies in the AgriTech Industry

Robotics

The global Food Robotics market was valued at \$1.5 billion in 2019 and is expected to reach \$3.2 billion by the year 2027, at a CAGR of 11.5%¹.

In modern competitive business, the role of robots is becoming significant for industrial applications. Two important motivators for using robots in the industry are the reduction of human interference and the increase of productivity.

The shortage of manpower led the global industry to use more robots and enhanced the annual growth rate of robots globally.

AI

The Artificial Intelligence component of the food and beverage market was valued at \$3.07 billion in 2020 and is expected to reach \$29.94 billion by 2026, at a CAGR of over 45.77% during the forecast period (2021-2026)².

One great example of AI in the AgriTech sector is project 'GAIA', designed to be a bold example of harnessing technology to make the desert green again. 'GAIA' is an AI-driven AgriTech incubator that can improve productivity yields up to 30% – using self-sustaining automated technology, without using hazardous chemicals, in a controlled indoor environment without the need for electricity and water.

Blockchain

The global blockchain in agriculture and food supply chain market size was estimated at \$133 million in 2020; it is projected to grow at a CAGR of 48.1% to reach \$948 million by 2025³.

Blockchain technology is expected to bring multiple benefits to the multiple players in the food industry. First, supply chains can revitalise their management and handling as they will have detailed information on member profiles, which provides a higher level of certainty over the safety of food. Proof of this is delivered to the consumer by implementing QR codes and product labelling.

Key Takeaways



AgriTech is particularly vital to the UAE's ability to produce food locally, given the region's arid climate. Start-ups within the AgriTech ecosystem are actively developing solutions they hope will be a key part of the country's food security strategy.



The harsh climate of Dubai makes food security a constant concern and a controlled indoor farming system is a solution. In 2018, it launched its National Food Security Strategy 2051, aiming to ensure access to safe, nutritious food through resilient and sustainable agricultural practices. In June 2020, the Cabinet approved the National System for Sustainable Agriculture to improve the efficiency of farms and enhance self-sufficiency, including cutting annual water consumption by irrigation by 15%.



Indoor Farming is the largest category, comprising 36.4% of all analysed companies. The second and the third biggest types are Precision Agriculture and Agri Inputs, with a 15.9% and 15.0% share, respectively. According to research, 65% of AgriTech companies are micro-sized enterprises with fewer than 50 employees.



It is no wonder that Abu Dhabi is increasingly recognised by international investors and innovators as a global AgTech hub: the ideal location from which to help drive forward the future of agriculture and address some of the biggest challenges facing the world's population.



In the coming years, the UAE will continue to support the development of innovative AgriTech in pursuit of greater self-sufficiency and overall security. The coronavirus pandemic and the effects of climate change make these goals critical to the success of the UAE as a nation as it looks to provide not only for its own citizen but also for its neighbours and global partners. Food security is poised to remain at the top of the UAE's national agenda.

Deep Knowledge Analytics Dashboards

Dashboard Overview

Deep Knowledge Analytics is building a sophisticated cloud-based engine for advanced market and business intelligence in various DeepTech industries. This includes a data-mining engine, infrastructure for expert data curation, and advanced visualisation dashboards, containing mind-maps, knowledge graphs, and 3D visualisations. The dashboard can be developed with a varied industrial and regional scope and stands as an interactive tool for advanced data visualisation, which allows for the user-friendly experience.

Smart matching tool	Machine Learning for database extrapolation	Dynamic SWOT analysis representing evolution of a company
Companies database	Machine Learning and deep neural networks for companies clusterisation	Interactive industry mind-maps
Investor database	Machine Learning for COVID-19 predictions	Real-time investments data analytics platform for DeepTech corporations
SWOT analysis	Governmental programmes for digital companies database	Longevity Industry financial instruments analytics

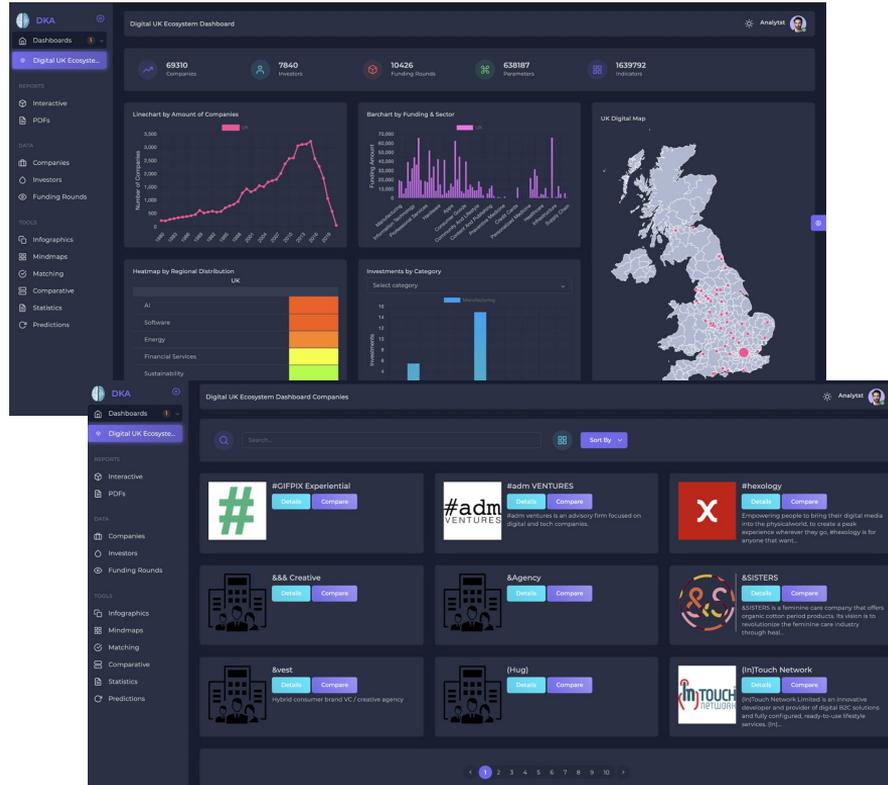
FoodTech Dashboard: Dynamic 360° Views of the Industry Ecosystem



For
companies

Market Research and B2B Matching Tool

- Obtain competitor analysis, product and market research;
- Find partners or service providers that specialise in your niche.



For
investors

Locate Start-Ups and Take a Closer Look at Them

- Browse FoodTech start-ups, scale-ups, and public companies to invest in or work with;
- Analyse industries and companies of interest;
- Monitor updates in real time.

Stay on Top of the Latest Intelligence

Reports



Global FoodTech Landscape Overview 2021 Q4

October 2021

DEEP KNOWLEDGE ANALYTICS

The cover features a blue wireframe hand pointing upwards against a dark background.

Contributors



Global FoodTech Landscape Q2 2022

May 2022

DEEP KNOWLEDGE ANALYTICS

www.dka.global

The cover features a blue wireframe globe with glowing nodes and connections.



Events



The Technology Revolution of FoodTech Industry

28 October 2021 | 5 PM - 8 PM BST

DEEP KNOWLEDGE ANALYTICS

The poster features a central diagram with boxes for Delivery, Retail, AgTech, Food Marketing, Next-Gen Food and Drinks, Food Service, Food Science, Food Processing, and GreenTech. To the right is a wireframe head with a brain, and a hand is shown interacting with a circular interface.



Building a sustainable future through FoodTech

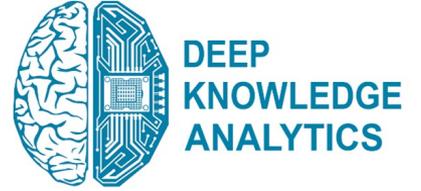
Panel Discussion | 7 June, 2022 | 3:00 PM BST

DEEP KNOWLEDGE ANALYTICS

The poster features a green background with a large tree and a vertical chain of icons representing food production and sustainability.

About Deep Knowledge Analytics

Deep Knowledge Analytics is a DeepTech-focused agency, an analytical subsidiary of **Deep Knowledge Group**, that produces advanced analytics on DeepTech and frontier-technology industries. It uses sophisticated multidimensional frameworks and algorithmic methods that combine hundreds of specially designed and specifically weighted metrics and parameters to deliver sophisticated market intelligence and pragmatic forecasting and tangible industry benchmarking.

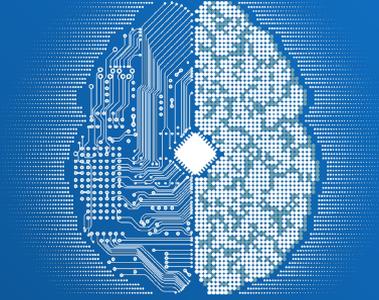


About Sharjah Research, Technology, and Innovation Park

Established in 2016 by royal decree of H.H. Sheikh Sultan Bin Muhammad Al Qasimi, Ruler of Sharjah, United Arab Emirates, **Sharjah Research, Technology and Innovation Park Free Zone (SRTIP)** aims to develop and manage an innovation ecosystem that promotes Research and Development and supports enterprise activities and the triple helix collaboration of industry, government and academia.

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Link to the Report: www.dka.global/agritech-uae-q3-2022

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