

# Smart Vertical Farming Unleashed The Green Revolution 2.0



September 2023

## INTRODUCTION

In an era characterized by an urgent call for environmentally responsible solutions and enhanced food production efficiency, SkyMesh has embarked on a groundbreaking mission to confront these challenges head-on.

As concerns surrounding climate change, dwindling resources, and food security escalate, traditional agricultural methods confront unprecedented obstacles. In response, we have taken a daring stride in reimagining a smart way to cultivate and access food. Drawing inspiration from the genius of nature and harnessing the cutting-edge potential of technology, SkyMesh has made a resolute commitment to develop smart, solar-powered vertical farming solutions.

Vertical farming strategically maximizes land use by layering multiple levels of crops, exponentially increasing yield per square foot when compared to conventional horizontal farming. By nurturing crops within a controlled indoor environment, we can overcome the limitations imposed by traditional seasons and unpredictable weather conditions, ensuring a consistent and dependable supply of fresh produce throughout the year.

Incorporating solar panels into our vertical farming containers not only reduces the carbon footprint associated with energy consumption but also augments the self-sustainability of our systems.

Moreover, our innovation possesses the capability to bolster food security by furnishing a reliable source of 100% fresh produce, even in regions characterized by challenging climatic conditions or limited arable land.

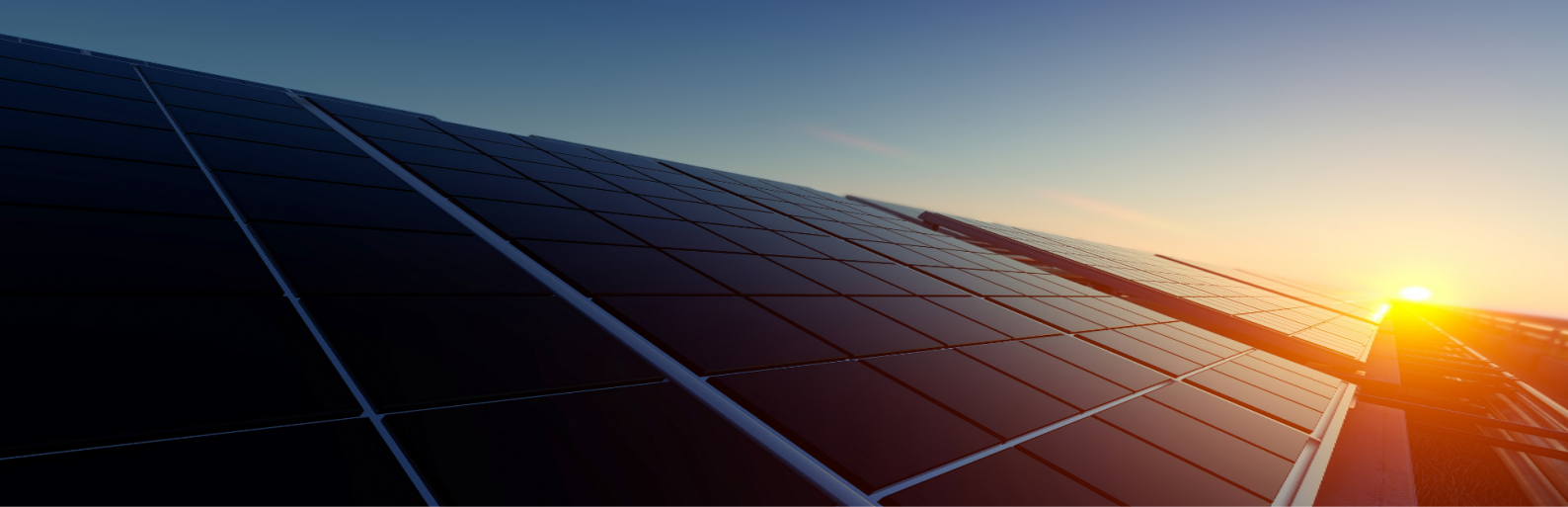


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A background image showing rows of green leafy plants growing in white trays inside a modern, brightly lit indoor farming facility with large windows.

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## Key features of SkyMesh's solar-powered smart farming containers



**Solar-Powered Sustainability:** Our pioneering smart farming container features integrated solar panels that capture the sun's energy, guaranteeing a sustainable and uninterrupted power source. This not only lowers operational expenses but also minimizes our carbon footprint

**Cutting-Edge Precision Agriculture Technology:** Within the smart farming container, a sophisticated array of sensors, IoT devices, and automated control systems diligently oversee and regulate vital variables including temperature, humidity, soil moisture, and more in real time. This seamless management optimizes crop growth while enhancing resource utilization efficiency

**Versatile Planting Solutions:** Seamlessly accommodate a wide range of crops through our adaptable modular planting system. Inside the container, you can personalize the layout with adjustable shelves, hydroponic or aeroponic configurations, and vertical farming features, optimizing both space utilization and crop yield.

**Remote Oversight and Management:** Keep your farm within reach, no matter where you are. Our intuitive mobile app and web interface empower you to remotely track critical data, receive timely alerts, and fine-tune settings to cultivate the ideal environment for your crops

**Environmental Resilience:** Through its capacity to control the internal climate, our smart container shields crops from adverse weather conditions and pest threats. This functionality guarantees uniform crop quality and reduces the risk of crop loss.

**Effortless Setup and Mobility:** Engineered for swift installation and effortless relocation, our smart farming container offers adaptability in diverse environments. Whether placed on conventional farmlands or in urban settings, this solution can accommodate your requirements without time-consuming setup procedures.

## 02 INDOOR VERTICAL FARMING ADVANTAGES

### Indoor Vertical Farming:

Indoor vertical agriculture revolutionizes crop cultivation by employing multiple stacked tiers and innovative soilless methods, steering clear of traditional soil-based techniques. Instead, it harnesses cutting-edge approaches such as hydroponics, aquaponics, and aeroponics. These practices fall under the umbrella of controlled-environment agriculture, aiming primarily to maximize plant growth.



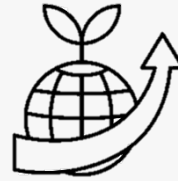
### Hydroponic Precision:

Hydroponic systems nurture plants in nutrient-rich water solutions instead of soil. This method aligns perfectly with vertical farming, optimizing spatial efficiency and offering meticulous control over nutrient delivery to plants. This precision promotes effective and sustainable crop growth within confined indoor environments.





Utilizes a mere 5% of the water typically employed in conventional farming practices.



Yield per square meter is several times greater than what is typically obtained through conventional farming methods

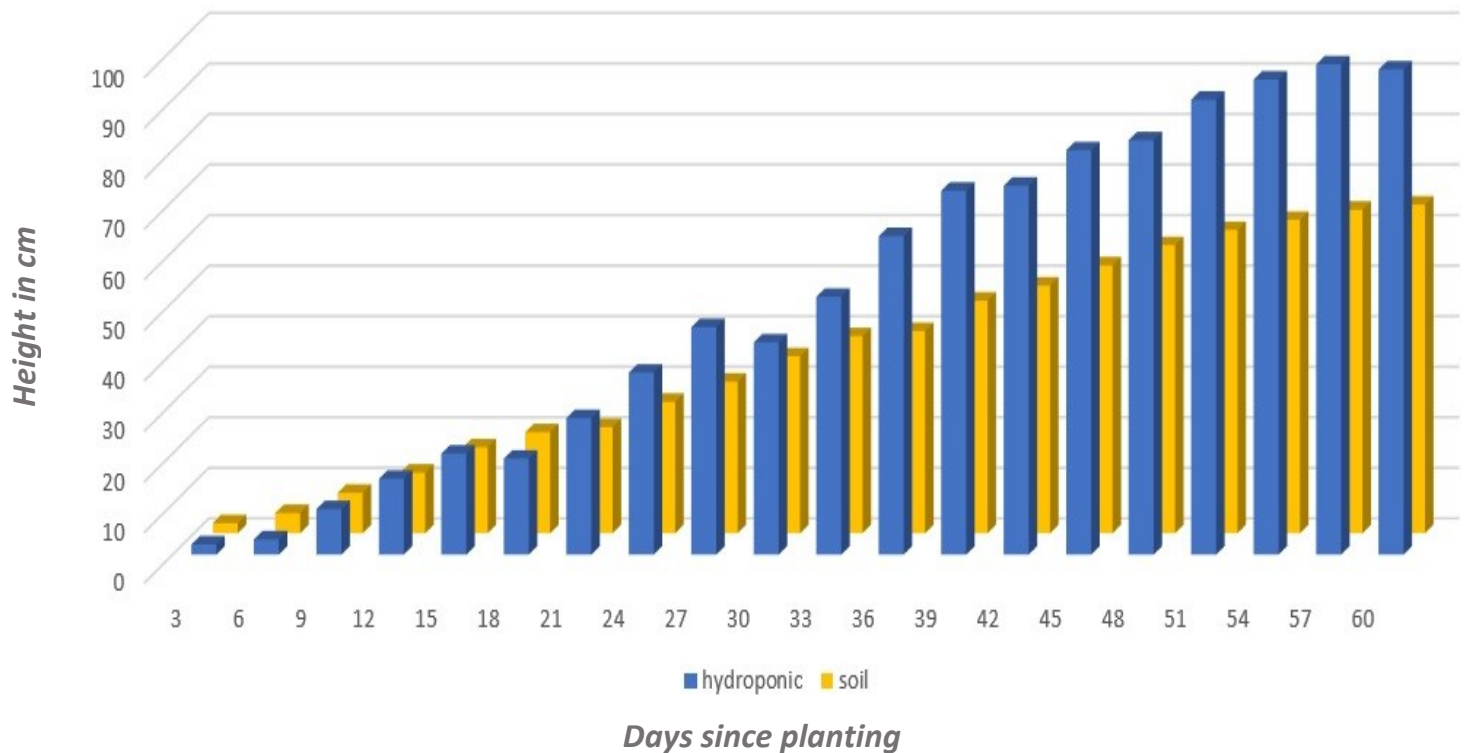


Establish a thriving sector dedicated to producing premium, high-quality food

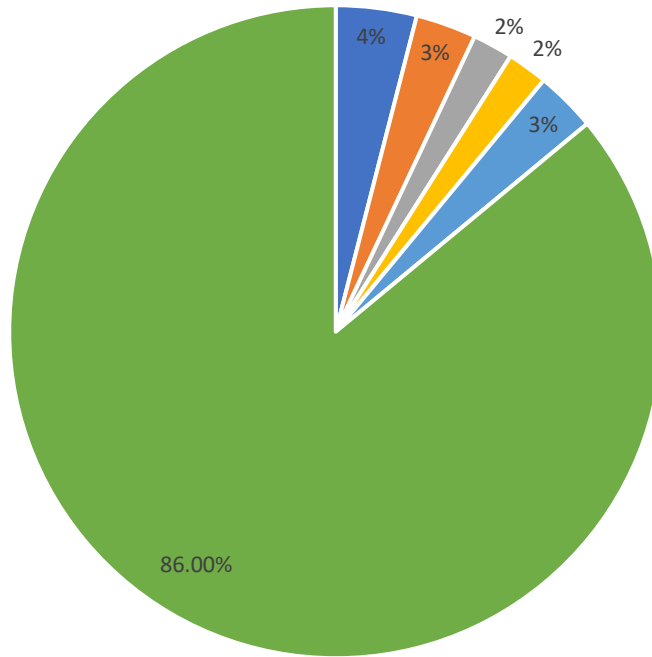


Continuous production and small-scale factory operations per container

***The impact of utilizing a Hydroponic System in contrast to traditional soil cultivation on the height of tomato plants.***



## 24-day lettuce growing process in Hydroponic System



- Substance preparation
- Preparation of nutritines and their dosage
- Installation of needed sensors
- Planting
- Harvesting
- Saved time

From the chart above, we can observe the time and energy needed for lettuce growth and the substantial increase in free time when using a hydroponic system.

Hydroponic systems promote faster plant growth due to consistent nutrient access and ideal conditions. In our example, lettuce is usually ready for harvest around days 20-24. In contrast, in traditional soil-based gardens, it takes 45 to 60 days on average for lettuce to be ready for harvest.



## 03 POTENTIAL CROP RANGE IN VERTICAL FARMING

### Vegetables



Lettuce



Spinach



Kale



Arugula



Microgreens



Sprouts



Beans and Peas



Bok Choy



Parsley



Radishes



Romaine



Cucumber



Mizuna



Tomatoes

### Herbs



Mint



Basil



Lavender



Sage



Dandelion



Lemon Balm

### Fruits



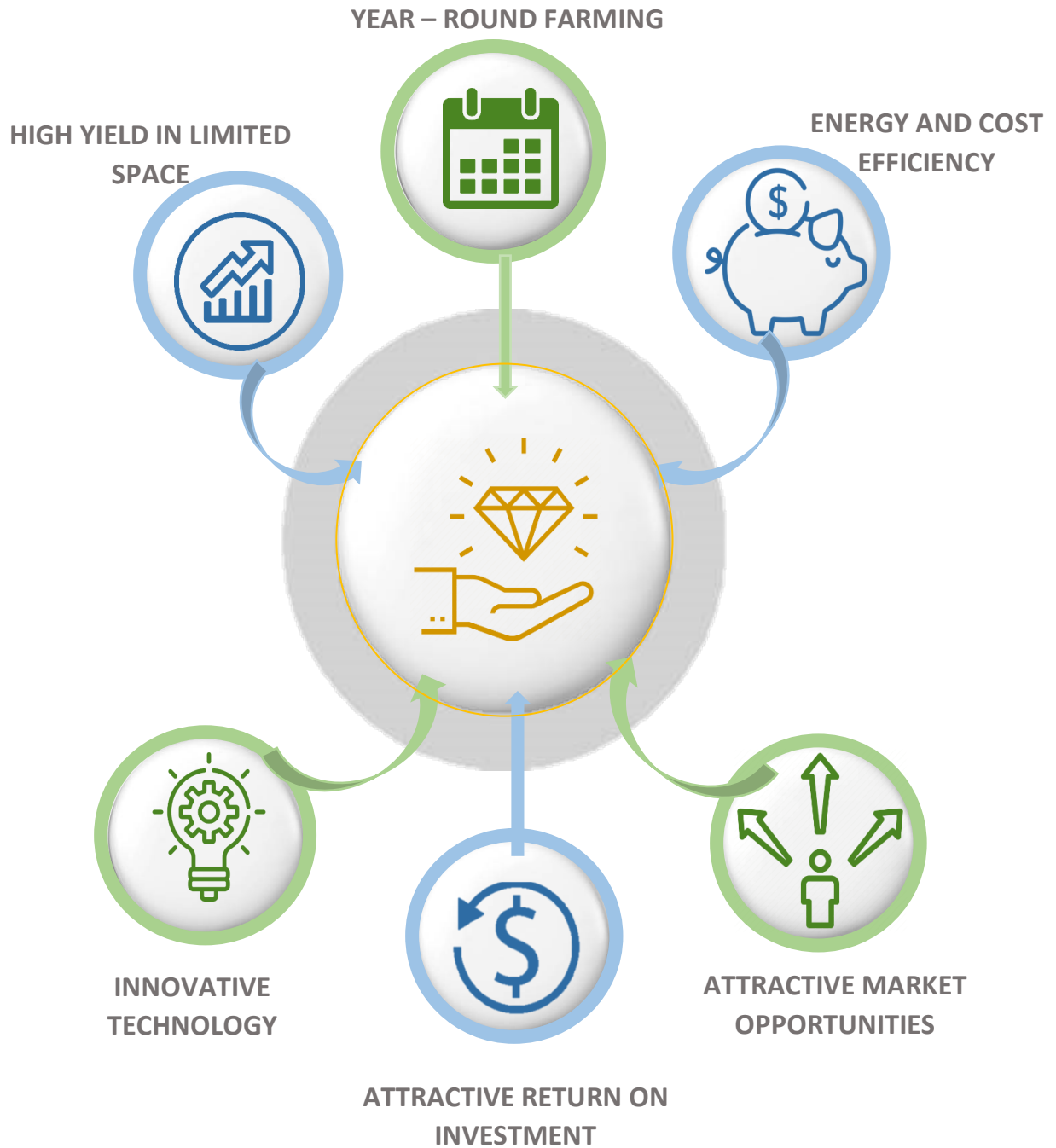
Strawberry



Berries



## 04 VALUE PROPOSITION FOR ENTREPRENEURS



**In conclusion**, embracing smart, solar-powered, vertical farming containers signifies a forward-looking approach to agriculture. These systems present a sustainable, efficient, and technologically advanced response to the evolving complexities of food production in our rapidly changing world.

The incorporation of smart technology within these containers elevates precision farming, enabling precise control over environmental factors such as temperature, humidity, and nutrient levels. This precision not only results in increased crop yields but also reduces the need for pesticides and other chemicals, fostering healthier and more sustainable food production practices.

Moreover, these containers excel in space optimization through vertical farming, facilitating year-round cultivation in urban areas and regions with limited arable land.

Furthermore, smart, solar-powered, vertical farming containers contribute to sustainability by harnessing solar energy to power the entire farming process. This diminishes reliance on fossil fuels, and substantially diminishes the carbon footprint traditionally associated with agriculture. At a time when the world is urgently addressing climate change, these unique containers present a practical solution aligned with global sustainability objectives.

SkyMesh's innovative systems seamlessly blend cutting-edge technology with sustainable energy sources to tackle pressing challenges in food production, positioning them as an appealing choice for the future of agriculture.

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## SkyMesh the Company

SkyMesh is a prominent Macedonian company specializing in IoT and smart industry solutions. It stands as one of Skopje's most well-capitalized enterprises, commanding an excellent reputation in the Macedonian market.

Furthermore, SkyMesh is a trailblazer in vertical integration, exclusively representing industry leaders in the telecommunications-mobile and digital solutions sectors.

At the forefront of innovation, SkyMesh is actively developing a ground breaking hardware and software platform, driven by an energy self-sustaining Wireless Sensor Network (WSN). This platform ensures continuous monitoring of crucial parameters, enabling real-time data analysis, and its adaptability renders it suitable for various industries, including agriculture.

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Let's get things started today



Our commitment is to lend an ear and offer assistance:

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