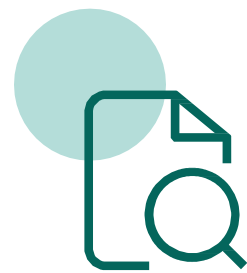


Building Vertical Farm

Hydroponic Farm Solution Presentation

Our Mission

Vertical Farm



It's been well publicized that our planet's population is growing faster than our ability to feed it. In the next 30 years, in the midst of a rapidly changing climate, we will need to feed 10 billion people with less water and less arable land. Faced with fewer resources, successfully feeding the world will require more innovative and reliable ways to grow safe food. Fortunately, agriculture is the world's oldest, most adaptable industry. If we take a look back at some of humankind's earliest cultivation practices, we might get some ideas for how to reshape the future of our food system.



What is Vertical Farm

Vertical farming is the agricultural process in which crops are grown on top of each other rather than in traditional, horizontal rows. Growing vertically allows for conservation in space.

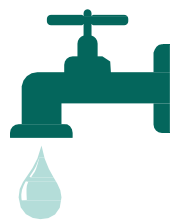


What are the Results

resulting in a higher crop yield per square foot of land used. Vertical farms are mainly located indoors, such as a warehouse, where they have the ability to control the environmental conditions for plants to succeed.

Why is Vertical Farming Important for Our Future Food System?

While traditional in-field agriculture businesses spend billions fighting plant diseases, natural disasters, and herbicide resistance, vertical farms seem to solve all these problems. By going vertical, farmers can focus on quality, nutrition, and the taste of the produce. As a result, products grown indoors can improve health, nutrition, sustainability, and profit for all parties involved.



Irresponsible Water Usage:

About 70% of the world is covered by water, but only 2.5% is fresh. Only 1% percent of freshwater is easily accessible — and agriculture consumes 70% of it globally. That's a lot of water!



Loss of Arable Land:

Over the past 40 years, we've lost 30% of Earth's arable land due to damaging practices, such as urban encroachment and pollution, that cause both topsoil erosion and poor soil health.



Use of Pesticides

Every year, the U.S. uses more than one billion pounds of pesticides, which can impact ecosystems and diminish soil health. An estimated 70% of U.S. produce has traces of pesticides.



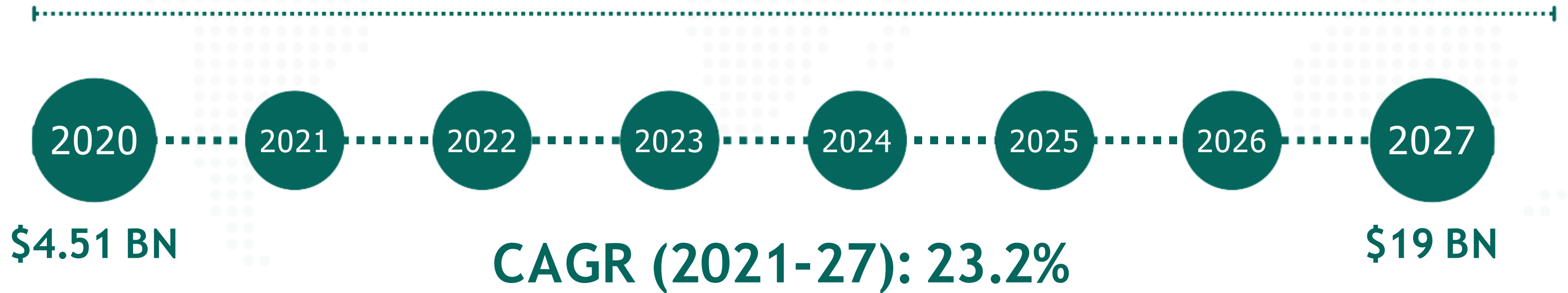
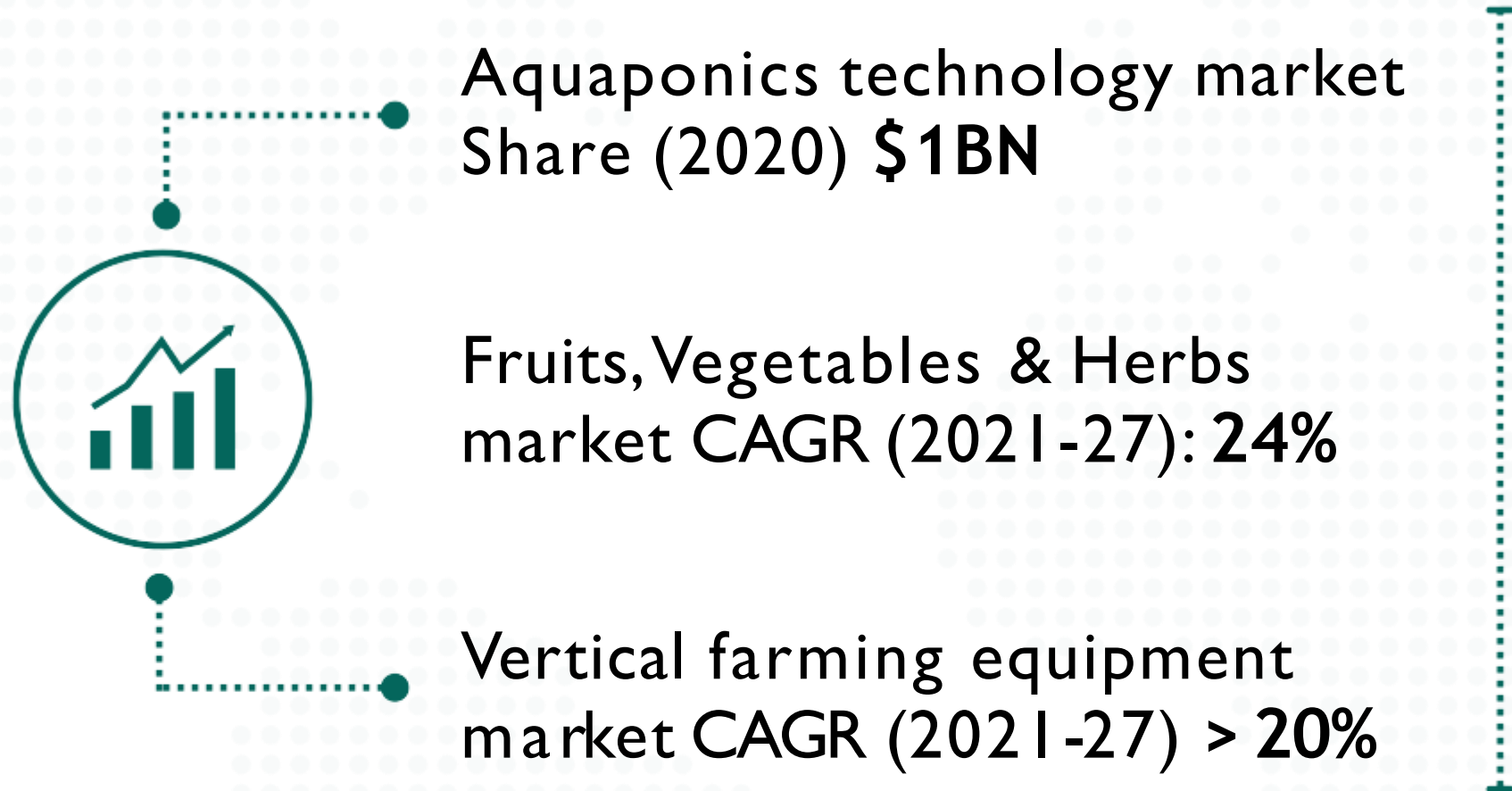
Comparison of traditional farms, greenhouses, and vertical indoor farms

	Traititional	Green House	Vertical Farm
Growth process	70 days	40-50 days	21 days
Number of Crops per m	18	25	25-300
Crop cycles	Season	Season	365 days
Water usage/1000g	350L	150L	15L
Pesticides / Hebicides	Often	Less often	Never
Location	Open field	Open field	Everywhere
Post-harvest handeling	High	Medium	Low



Talking about the benefits of vertical farming, we can project a future where **supermarkets** produce food right in their warehouses. **Smart buildings** can maintain vertical farms on the roof or in some other areas to supply **neighborhoods** with fresh products. Local indoor farms that can operate no matter the weather can also reduce dependency on imports, lowering food prices.

Vertical Farming Market

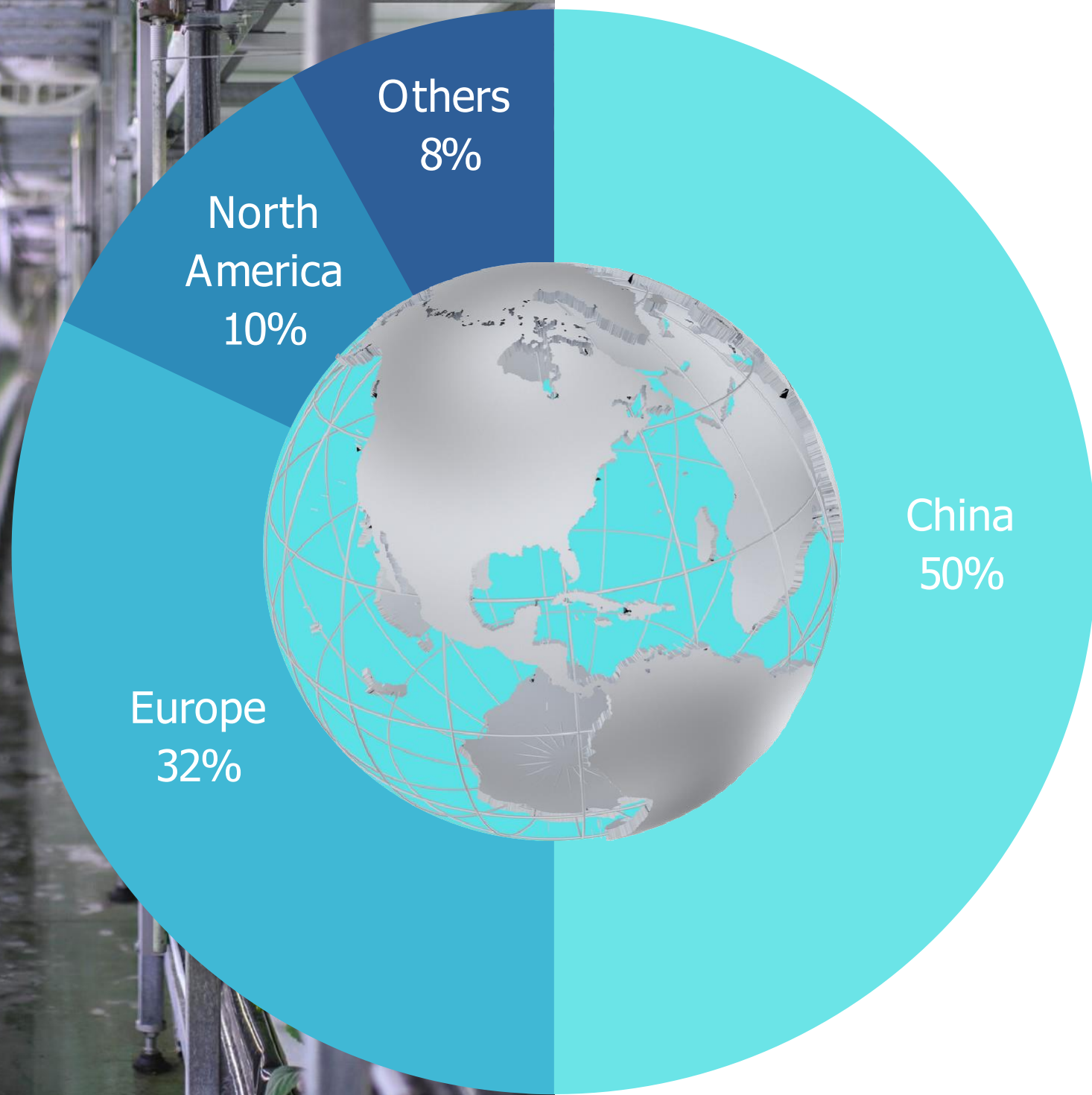
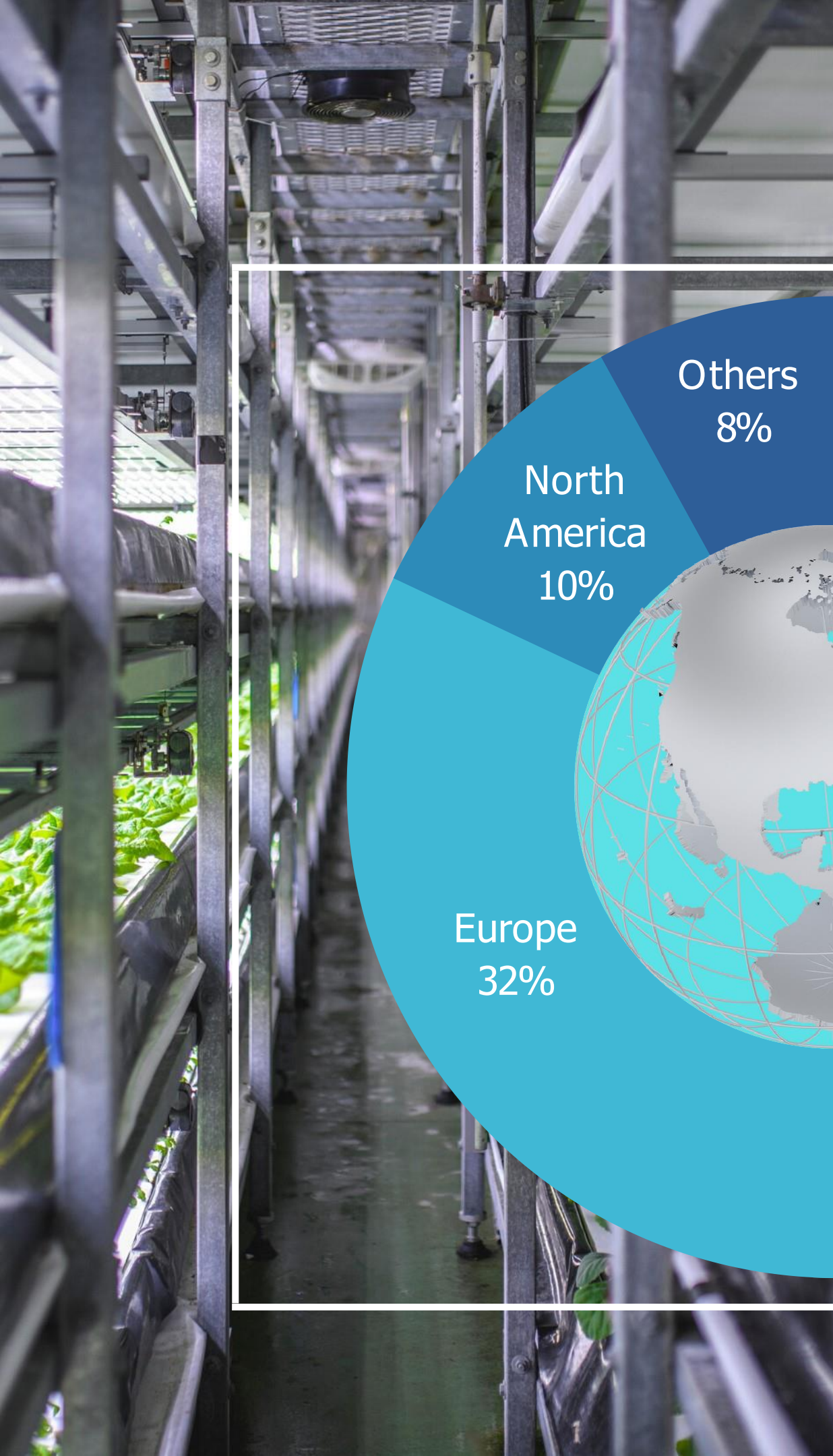




Since 1998, GMY Lighting has been recognized worldwide for its outstanding product technology, excellent product quality, and thoughtful customer service – with solutions spanning general lighting, automotive lighting, ultraviolet lights, equipment for disinfection, infrared and other health uses, and specialized horticultural and agricultural applications.

GMV produces hundreds of millions of light source products annually, sold in more than 100 countries worldwide. Our development and manufacturing campus spans an area of nearly 80,000 square meters, with more than 700 employees. GMY production has been reviewed and certified under ISO9001, ISO14001, SA8000, and ITAF16949 guidelines.

As a world leader in the application of light technology, GMY works with partners to “create a better life with light.” We provide customers with the highest quality products, services, and solutions, and continuously improve and innovate to create greater value for our customers



Market Distribution

We are a global business, active in over 100 countries

GMV provides quality products and professional services to hundreds of millions of users around the world

Cooperative Development and Branding - We provide customized products for more than 100 world famous brands



Vertical Farming



No weather affect



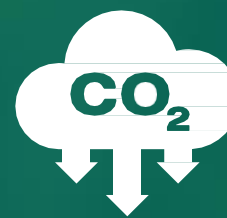
Multi-layer



Short planting time



High returns



CO₂ goes down



High land usage



Indoor Vertical Hydroponic Module

Tailor-made Home, Restaurants, and Supermarkets solutions, with the same efficacy, for more minor usages of needs. Lets smaller growers enjoy the benefits of hydroponics farming in their place.

Container planting system 40HQ Vertical Farm

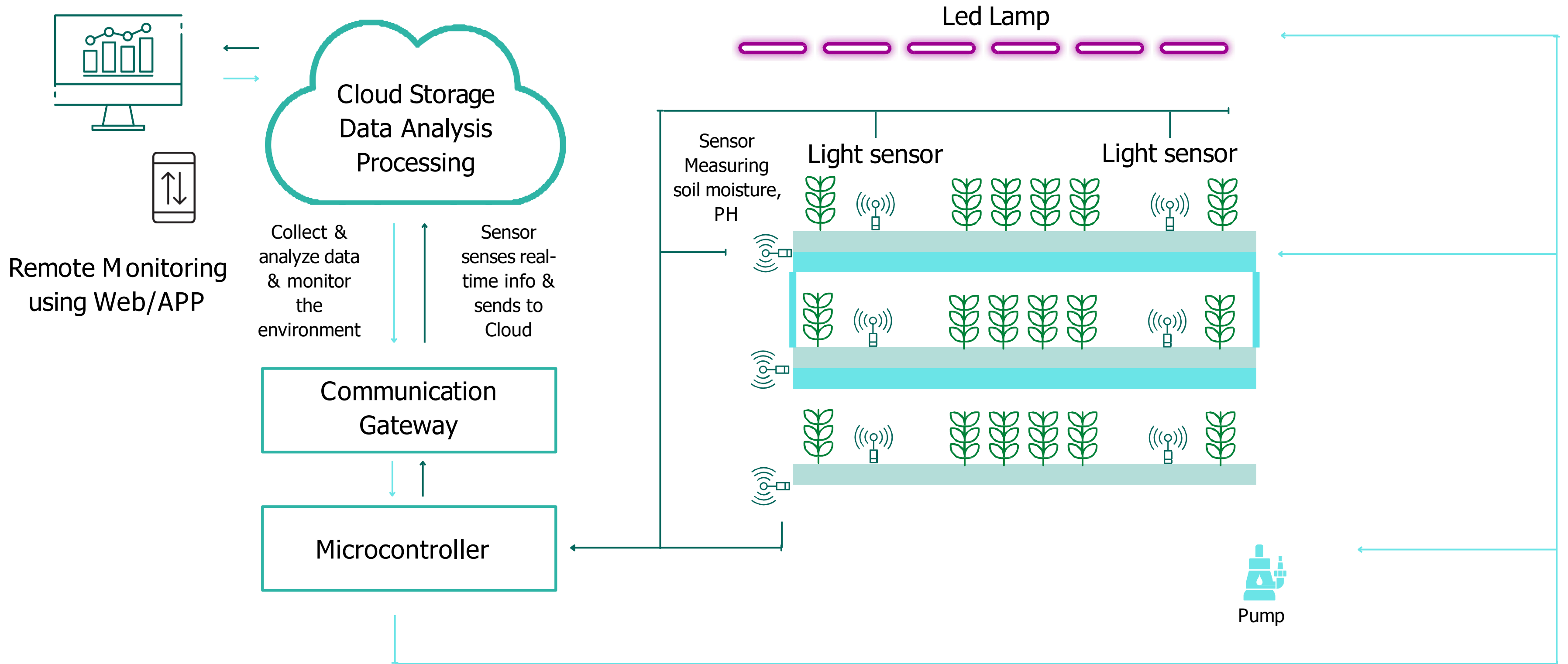
Created to grow local food for local communities. It integrates indoor vertical farming and hydroponics in one shipping container, ready to be deployed under any climate across the globe.

Integrated system of vertical planting

Multi-layer seedling technology, large-capacity planting space. With professional seedling spectrum and high uniformity optical design. Precision irrigation technology to achieve scientific nutrient supply. The mobile modular design of the seedbed can flexibly shuttle between each operator station, saving time and effort and realizing efficient operation.



VERTICAL FARM SOLUTION




GMY container introduction Vertical Farming

GMY Grow Module is a 40 feet module equipped with a hydroponic NFT system to deliver a preassembled farming facility to its customers. The system can be separated into two sections: the equipment section and the growing section. Respectively the module is identical, enabling growers to easily plan their year-round production and expand the system virtually unlimitedly

 **Growing Module**
NFT Channels
Metal Rack
Sump System
Air Conditioning
LED Grow Lights



 **equipment Module**
Water & Nutrient tank
Auto Dosing System
Feeding Water Pump



exhaust fan

For agricultural planting, it is essential to control humidity and CO2 concentration. The container is equipped with exhaust fan and intake fan to provide enough CO2 for photosynthesis and make the humidity in a specific scope.



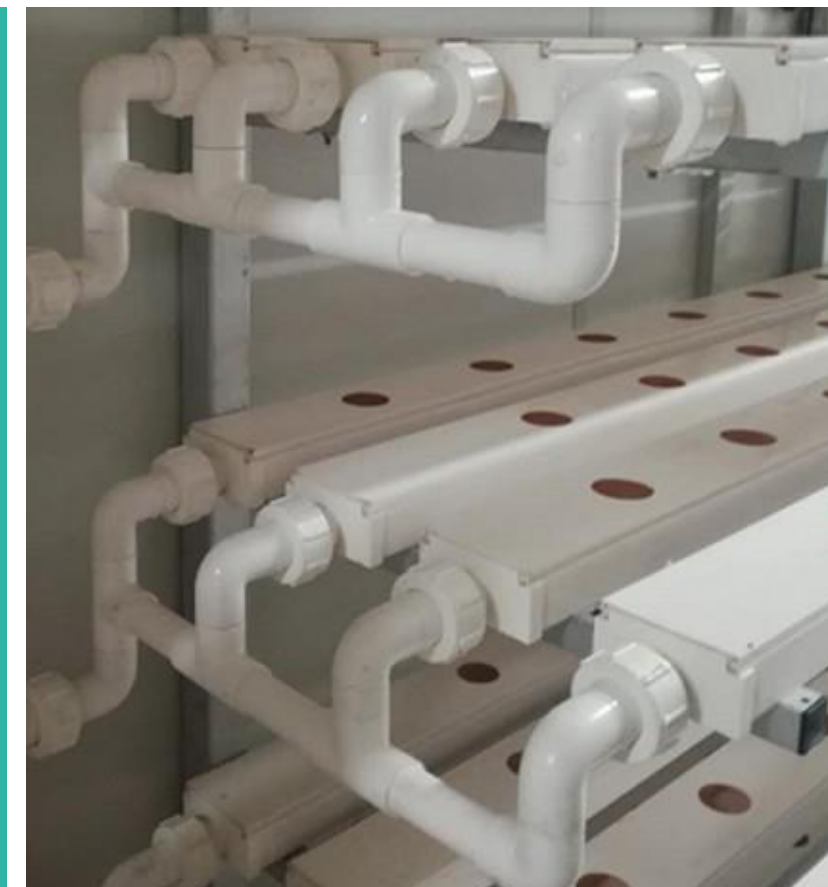
Planting system

6 layers of Dacro metal tube
Nutrient Film Technique
(NFT) system



circulating fan

The container is 12 meters long, and air conditioner is installed on right side of container. so the hot/cold air cannot reach the other side. So need use circulating fan to mix air, to ensure uniform temp of whole planting district.



Agricultural lighting system

Grow Light An artificial light source, is designed to stimulate plant growth by emitting a light appropriate for photosynthesis. Photosynthetically Active Radiation, or PAR, designates the spectral range

Automatic fertilization system

The sensor inside the system can detect PH and EC values inside the water tank, and according to realistic situation adjust the PH and EC value.



Filter system

Water returns from the drainage system into the central groove. The first step is a sand filter, which can filter the particulate matter of more than 2um.

After the particulate matter is cleared, Water flows to the cartridge filter, which is used to filter the matter inside wasted Water further.



sterilization system

Ozone generator is used to sterilizing water, which can quickly kill many kinds of bacteria and virus.



The future of vertical farming is hiding in this shipping container



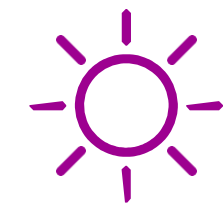
INTEGRATED ENVIRONMENT CONTROL

Temperature, Humidity, CO₂ concentration, Water recycling, tech Air purification, Water sterilization.



INTEGRATED VENTILATION DESIGN

Air exchange, Air circulation, Special airflow for plants



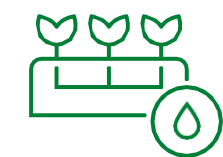
LIGHTING

Plant-oriented full light spectrum ,Power dimmable ,Time control.



SAFETY

Complete fire protection system, Certified electronic parts.



INTEGRATED IRRIGATION

Vertical farming design, multiplied plantation area Aeroponic and NFT combined tech, Grow from seed to harvest, no need transplant, save labor. Nutrient cooling system, Dosing system with PH balance automatically.



ALL-IN-ONE CONTROL SYSTEM

10' Touch screen dashboard Cloud APP support



(Vegetables, Herbs, or Fruits)

15 Best Hydroponic Plants That Can be Easily Grown



Lettuce



Strawberries



Basil



Spinach



Sage



Bell Peppers



Chives



Kale



Tomatoes



Celery



Thank You