



Gérard Farache



Une révolution pour l'agriculture indoor



Welcome  
to the Future...



# The rise of Vertical Farming

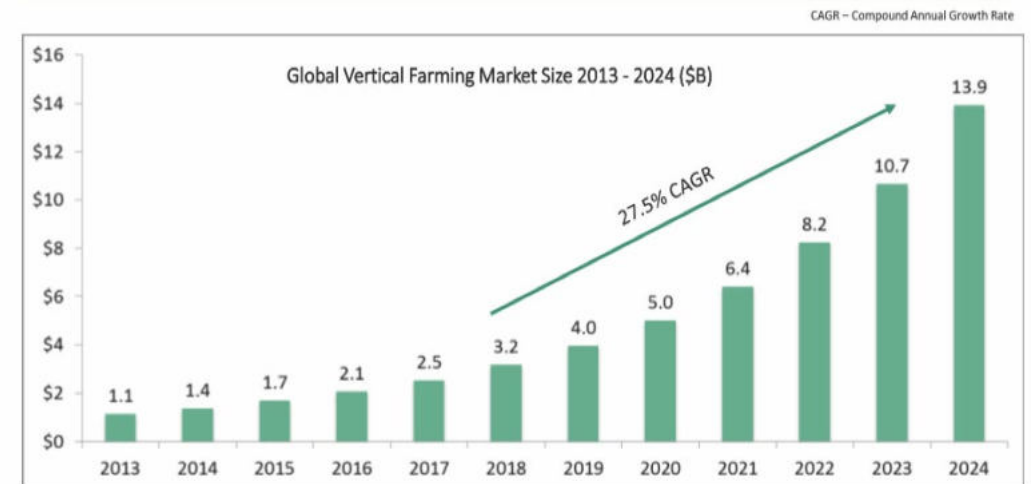


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## Constraints & challenges

- *Climate disorders that affect the traditional agriculture*
- *Environmental concerns :*
  - *CO2 emissions related to transportation (food mileage)*
  - *Public Health concern about pesticide's use*
  - *Soils and air pollution absorbed by the plants*
  - *Critical need to save water in agriculture related activity*

Vertical farming market size is growing at 27.5% annually and expected to reach \$13.9B by 2024



Source: Vertical Farming Market Size by Global Market Insights

**ALL THE REASONS ABOVE EXPLAIN WHY  
VERTICAL FARMING IS  
ON THE RISE**

# The Challenges for Urban Farming

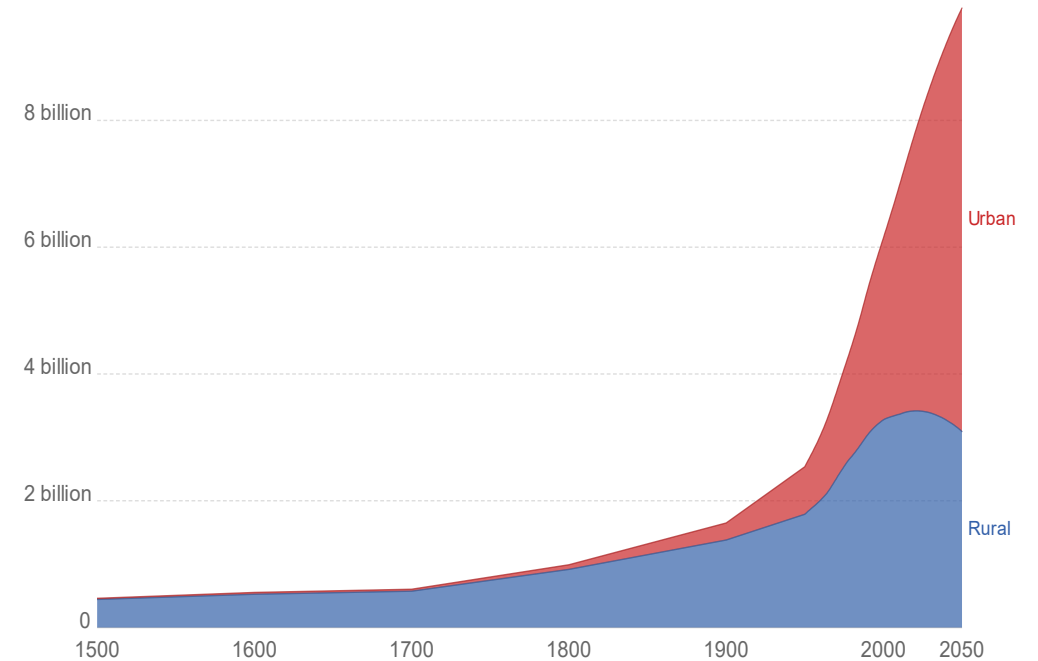


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## Urban and rural population projected to 2050, World

Total urban and rural population, given as estimates to 2016, and UN projections to 2050. Projections are based on the UN World Urbanization Prospects and its median fertility scenario.



Source: OWID based on UN World Urbanization Prospects 2018 and historical sources (see Sources)

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## World population

*10 Billions inhabitants by 2050*

*Growth of 90 Millions every single year*

## Unstoppable urbanisation

*2015 : 60% in the cities*

*2050 : 70% in the cities and megalopolis*

*Cities are producing 2/3 of greenhouse gas*

## Île-de-France Region

*940 Ha of green areas are disappearing / year.*

*By 2030, the population will grow by 1 Million*

**Lack of arable lands** for the additional population to come

# The Challenges for Urban Farming



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## Unbelievable food millage

In Europe : 2 400 km

In the USA : 4000 km



## Other damages created by intensive agriculture

- deforestation,
- biodiversity loss,
- Huge water consumption,
- soil compaction and erosion,
- chemical pollution of the environment,

# The Consumers' expectations



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LOCAL



ENVIRONNEMENT



TRACEABILITY



AVAILABILITY



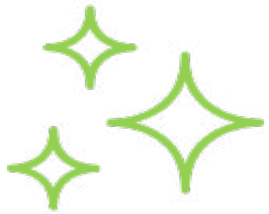
HEALTH



# The advantages of Indoor Vertical Farming



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## Pure

Controlled and sterile environment to prevent contamination issues at the source – **no pesticides** needed and the produce is ready to eat



## Efficient

Saving on utilities and labor with closed-loop design and automated tasks, minimizing the cost per plant



## Traceable

The rigorous quality control of the whole process allows collection of all cultivation parameters (Crucial for medicinal plants) and enables giving each crop a “traceability certificate”



## Uniform

Implementation of stable growth recipes & operational “know-how” permits consistency and reproducible premium produce across multiple facilities



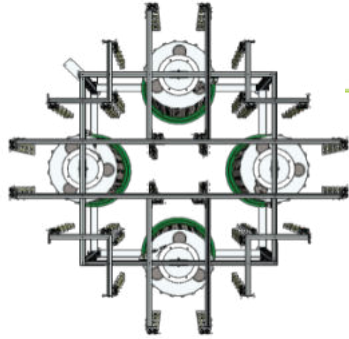
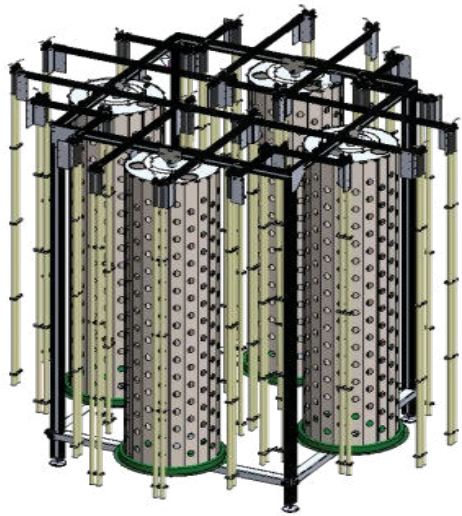
## Year-round Production

365 days per year of continuous cultivation without seasonal, geographic or climatic restrictions

# Tower Farm Solution



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**Une unité = 4 Tourelles**

9 m<sup>2</sup> / unité de culture

Hauteur : 265 cm

Diamètre : 60 cm

300 - 500 alvéoles / tourelle

133 - 200 plants / m<sup>2</sup>



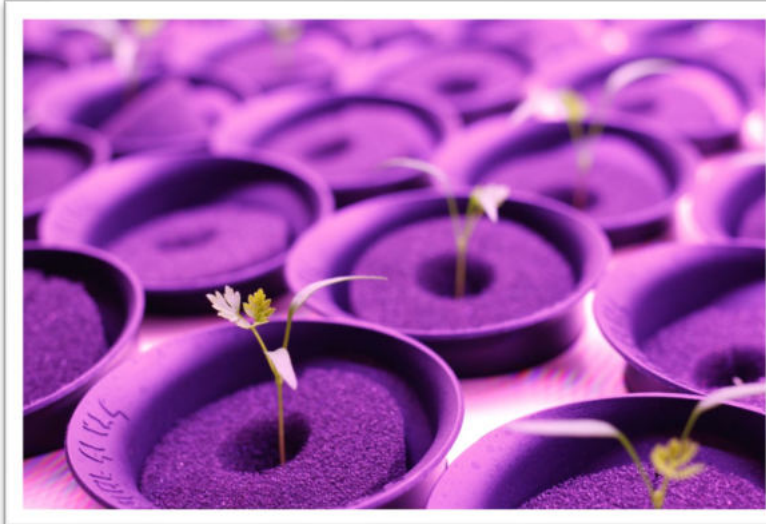
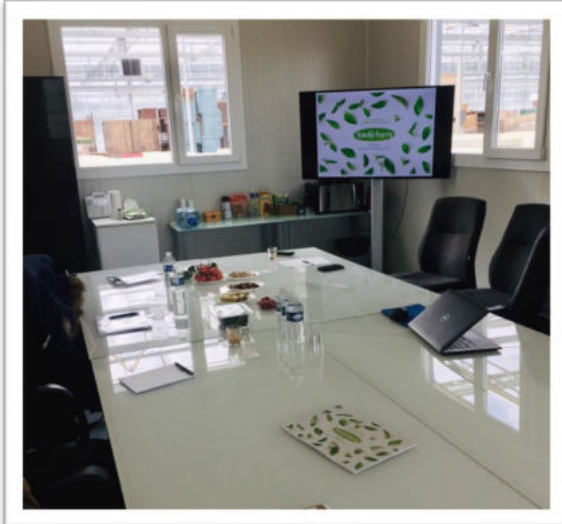




# La Technologie



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# The advantages of Tower Farm's solution



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## Scalability

Modular systems designed to grow with the business needs and market demand



## Flexibility

Grow a wide variety of crops. Quickly and easily switch between crops.

Systems are designed for use anywhere on the planet and anywhere in the value chain.



## Affordable

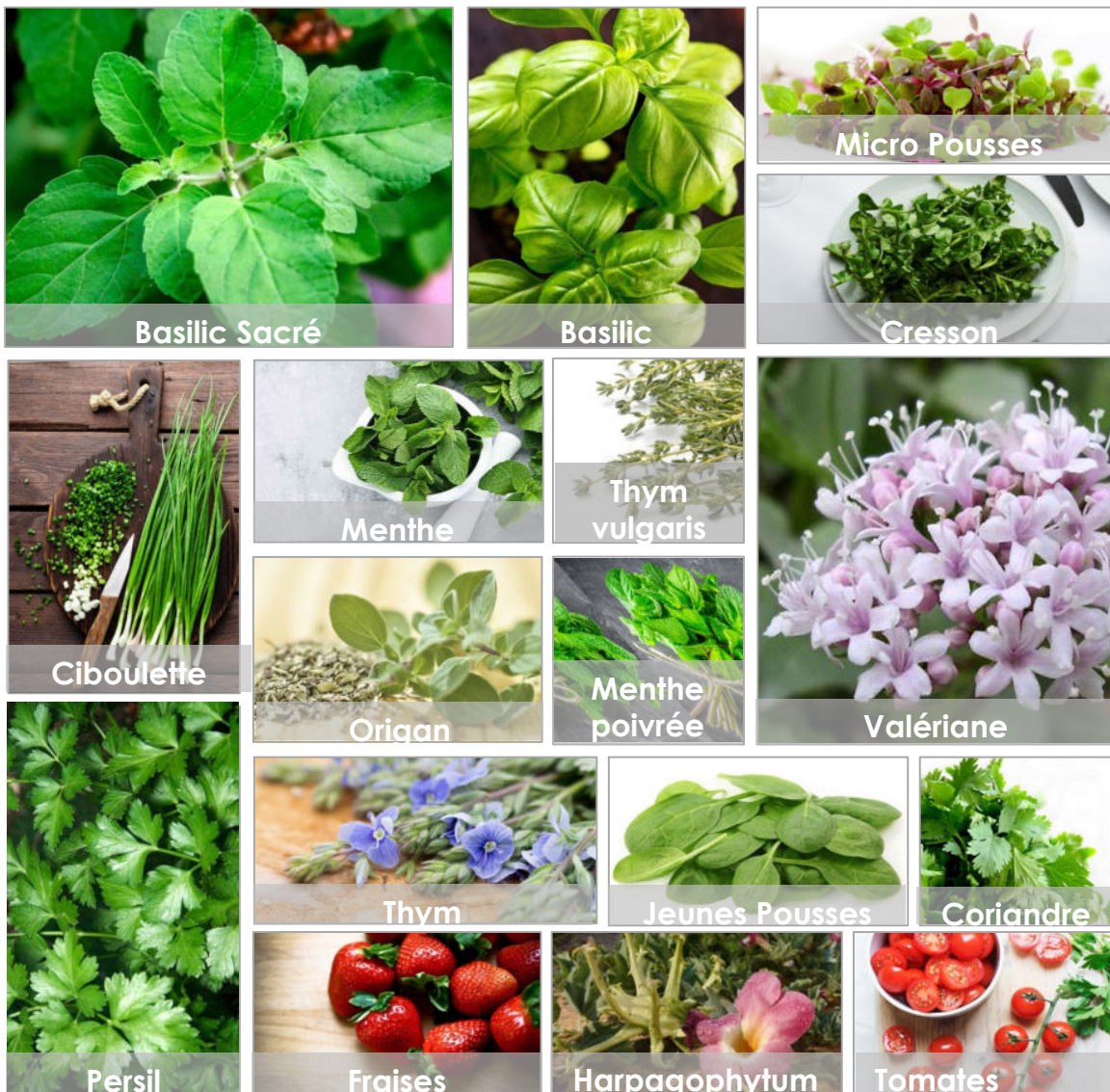
Cost effective set up and operations; greater yields and less waste, drive higher profitability **without** large initial CAPEX



## Smart

A complete proprietary and sustainable ecosystem that is simple to operate, supported by AI, remote monitoring and controls, known and proven protocols & procedures and continuous R&D and optimization

# Our Activity and Challenges



Basil	←→	Holy Basil (Tulsi)
Mint	←→	Mentha Piperita
Thyme	←→	Thymus Vulgaris
Sage	←→	Salvia officinalis
Parsley		Valériana officinalis
Chives		Melissa officinalis
Watercress		Galega officinalis
Coriander		<i>Harpagophytum</i>
Origano		<i>Arnica</i>
Baby leaves		<i>Saffron</i>
Micro leaves		
Strawberries		

## Our current challenges in the medicinal plants field

- ✓ **To optimize the cultivation process**
- ✓ **Achieving total uniformity & consistency**
- ✓ **Increase active ingredient content**

# Vertical Farming Barriers & Challenges



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## Psychological

To raise the awareness of the average consumer's perception regarding the advantages of controlled environment agriculture



## Financial

To decrease production costs by developing a more sustainable, efficient and pioneering technological solutions



## Regulatory

Today, the regulation doesn't keep up with the innovation. We need update legal framework for indoor agriculture, the compliance and the label (BIO, Local, Premium, "better than organic", etc..)



## Public Support

We expect authorities, large multi-national enterprises and the academia to adopt the new ecological and pioneering solutions as a part of their CSR activity (Corporate Social Responsibility) in order to support the innovation

A close-up photograph of fresh green basil leaves, showing their characteristic serrated edges and vibrant color. The leaves are densely packed and fill the entire frame. A white logo watermark is centered over the image, featuring a stylized leaf design. The text "Thank you for growing with us" is overlaid in white, sans-serif font, with the logo watermark acting as a visual separator between the words "growing" and "with".

Thank you for growing with us