

AGRICULTURE, EXPONENTIAL™

WE ARE INNOVATORS, MAKERS, FARMERS, DREAMERS



ONO
EXPONENTIAL
FARMING



Fast Company's Award
World Changing Idea 2020

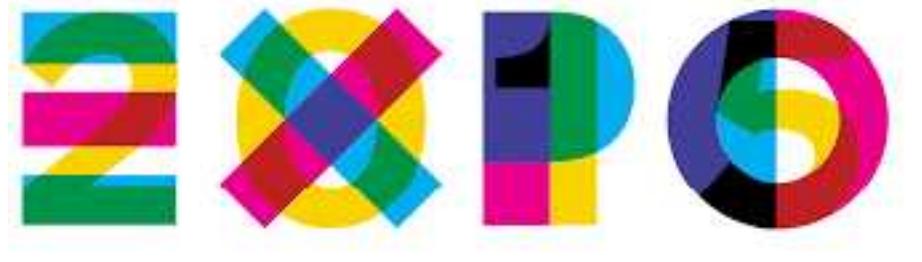
ADI DESIGN INDEX 2020
SELECTED PRODUCT

VALUE PROPOSITION

ONO EXPONENTIAL FARMING
INDOOR VERTICAL AGROBOTICS AS NEVER SEEN BEFORE



**ONO Exponential Farming develop technologies and services
which enable anyone to grow anything, anywhere in the World,
in a sustainable, agile and profitable way.**



MILANO 2015

THE INSPIRATION

ONO Exponential Farming
We are **innovators, makers, farmers, dreamers**



Photo: ONO Exponential Farming





VERTICAL FARMING CONCEPT CURRENTLY WIDESPREAD

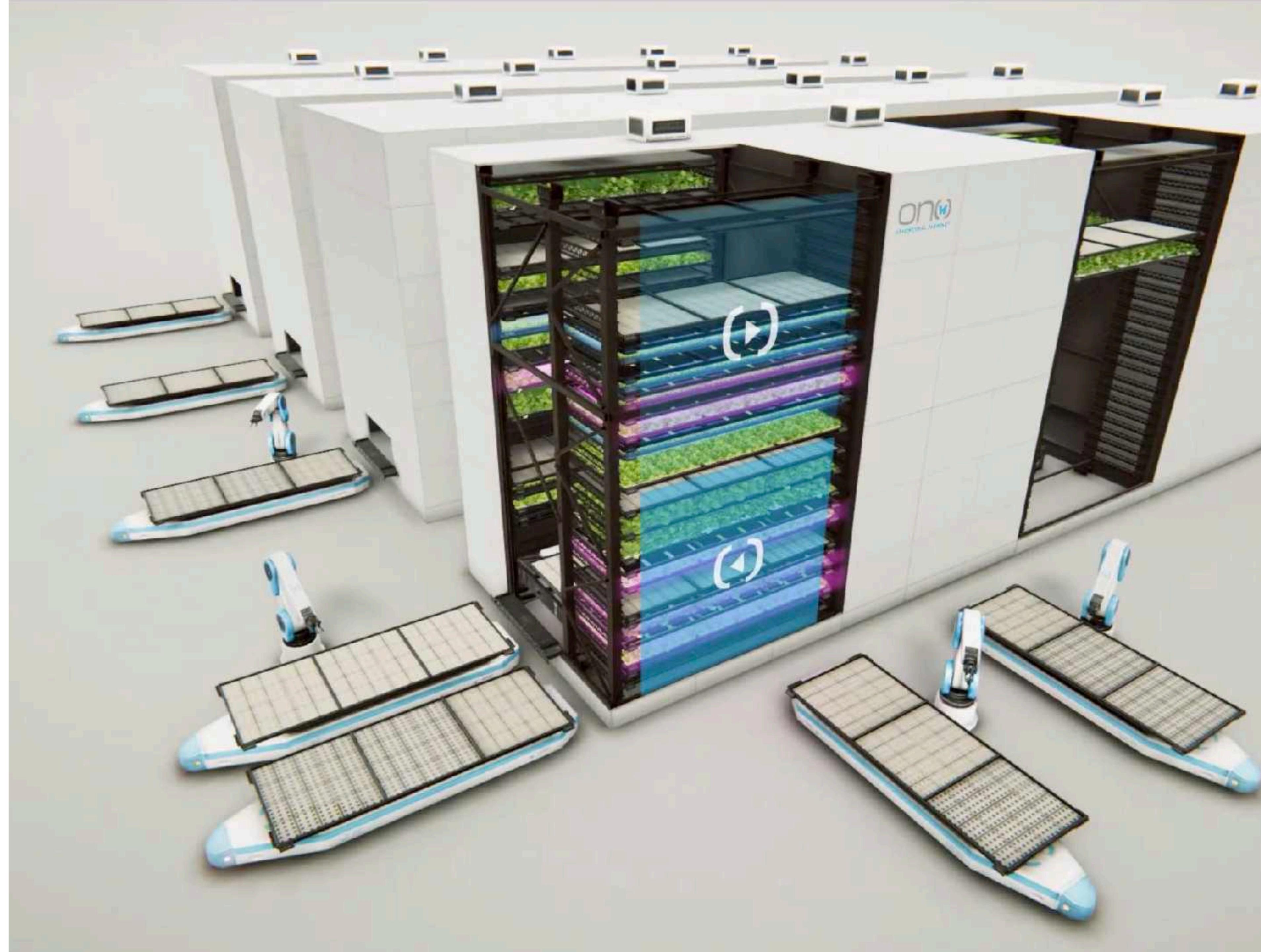
ONO Exponential Farming
We are **innovators, makers, farmers, dreamers**





ONO EXPONENTIAL FARMING CONCEPT

ONO Exponential Farming
We are **innovators, makers, farmers, dreamers**



PROBLEM TO BE FACED

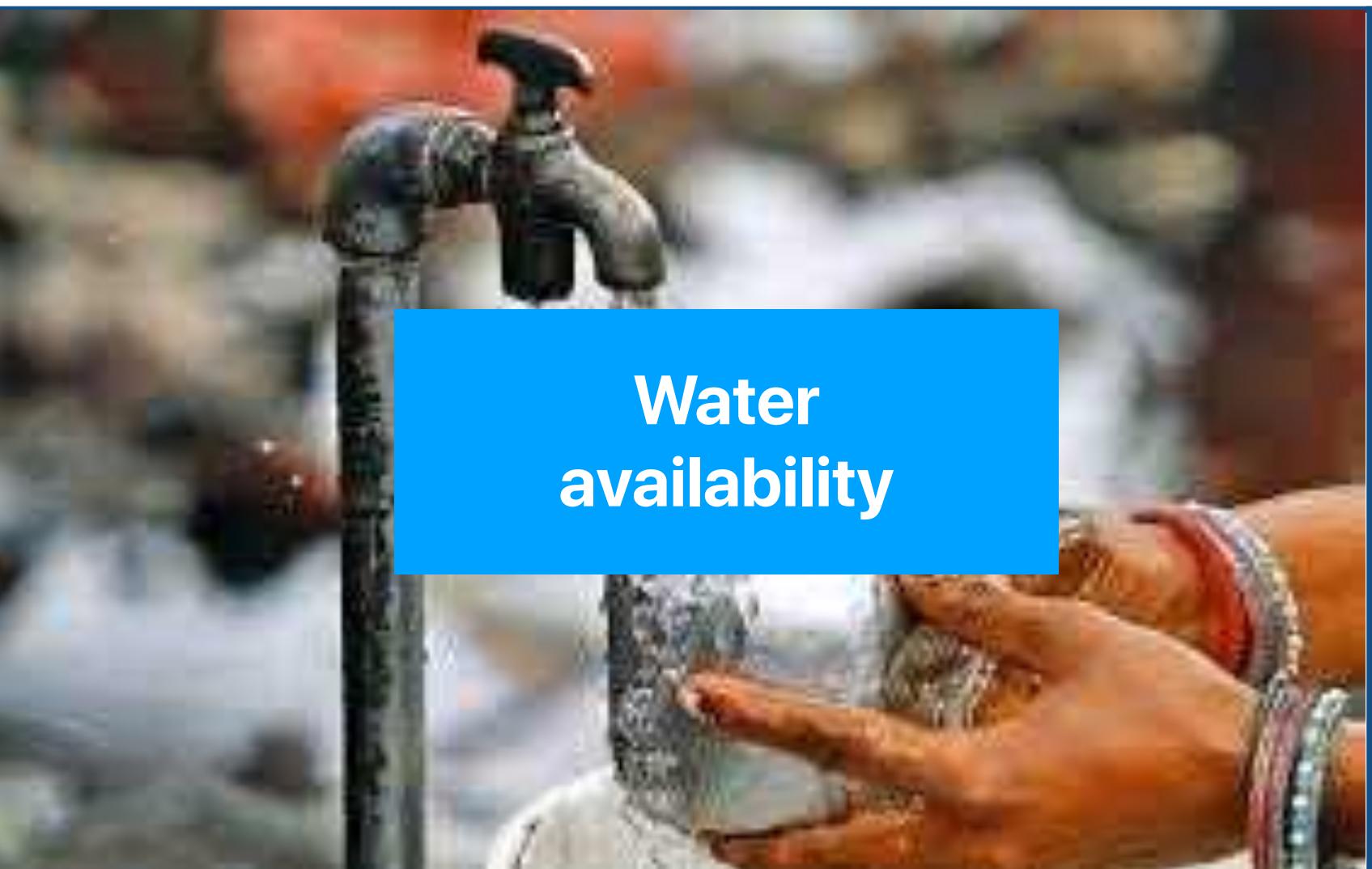
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Climate change issues



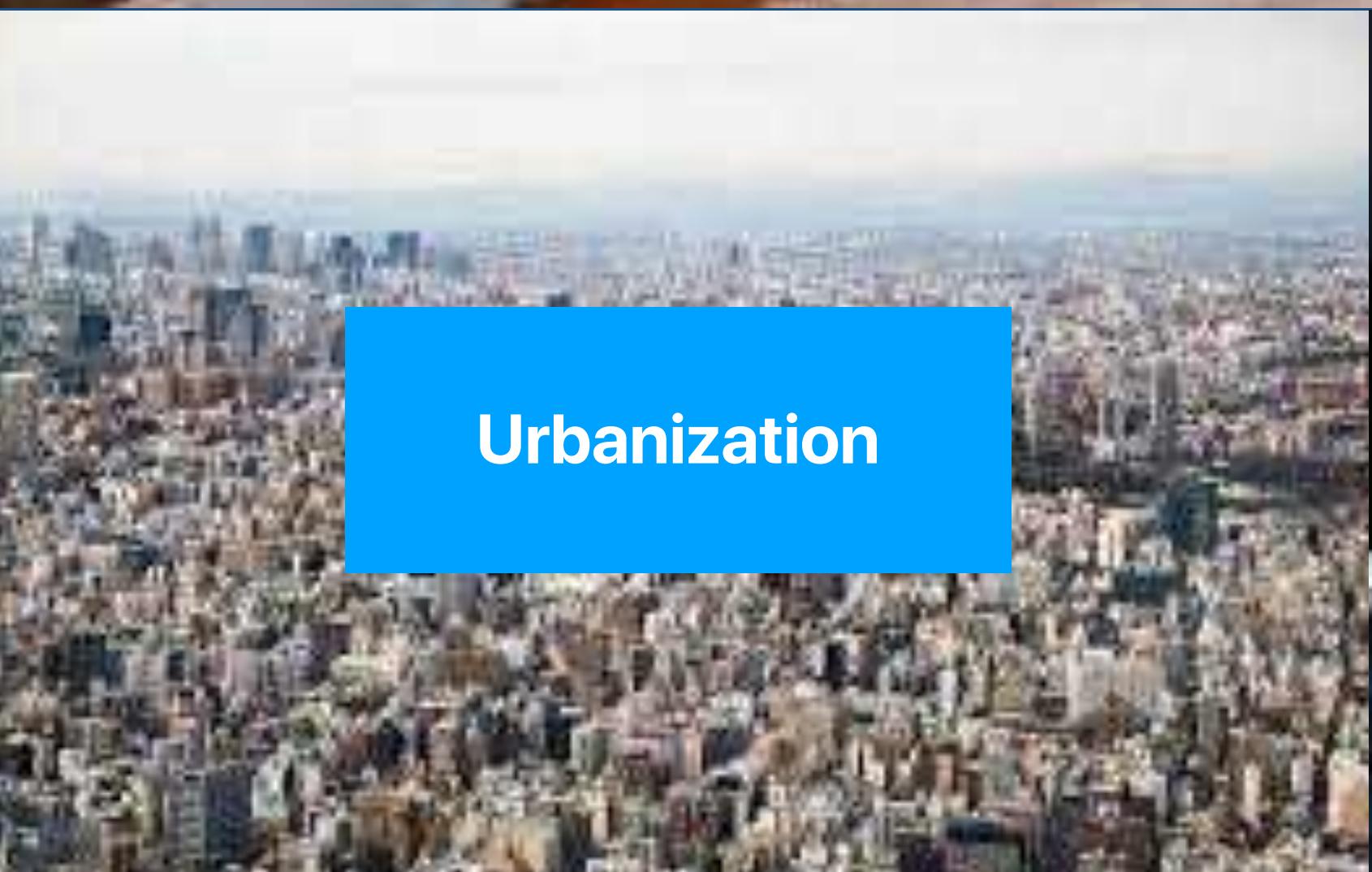
Pollution and Traceability



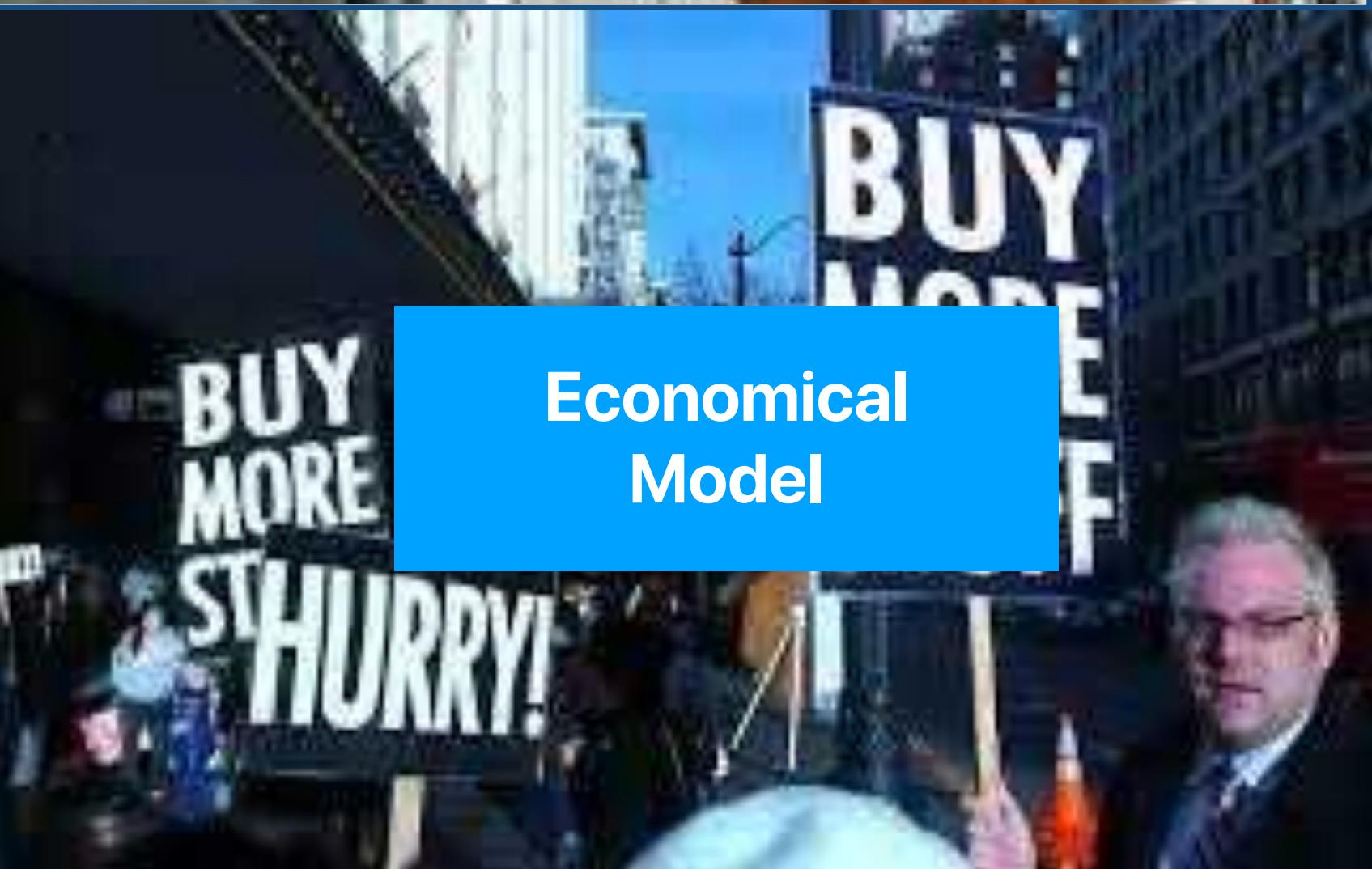
Water availability



Population increase



Urbanization



Economical Model

VALUE PROPOSITION

ONO EXPONENTIAL FARMING
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PROBLEMS OF TRADITIONAL AGRICULTURE

- ▶ Climate Change
- ▶ Water consumption
- ▶ Resource availability (land, labor, knowledge)
- ▶ Seasonality, availability and standardization
- ▶ Pesticides
- ▶ Product traceability
- ▶ Supply chain
- ▶ CO2 emissions



PROBLEMS OF VERTICAL FARMING

- ▶ Investment level
- ▶ Energy consumption
- ▶ Workforce usage
- ▶ Knowledge
- ▶ Supply Chain



ONO EXPONENTIAL FARMING

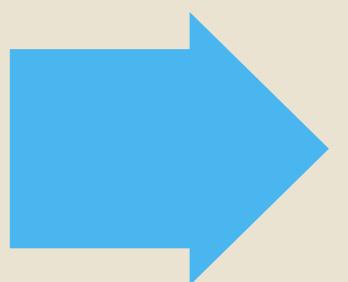
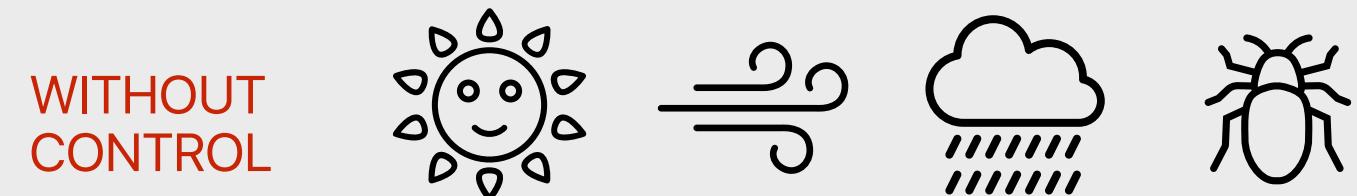
ONO Exponential Farming enables anyone, to grow anything, anywhere in the World, in a sustainable, agile and profitable way.

ONO/EF: THE 4TH FARMING REVOLUTION!

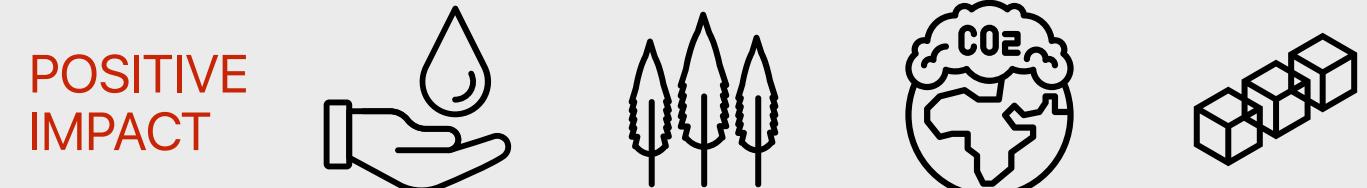
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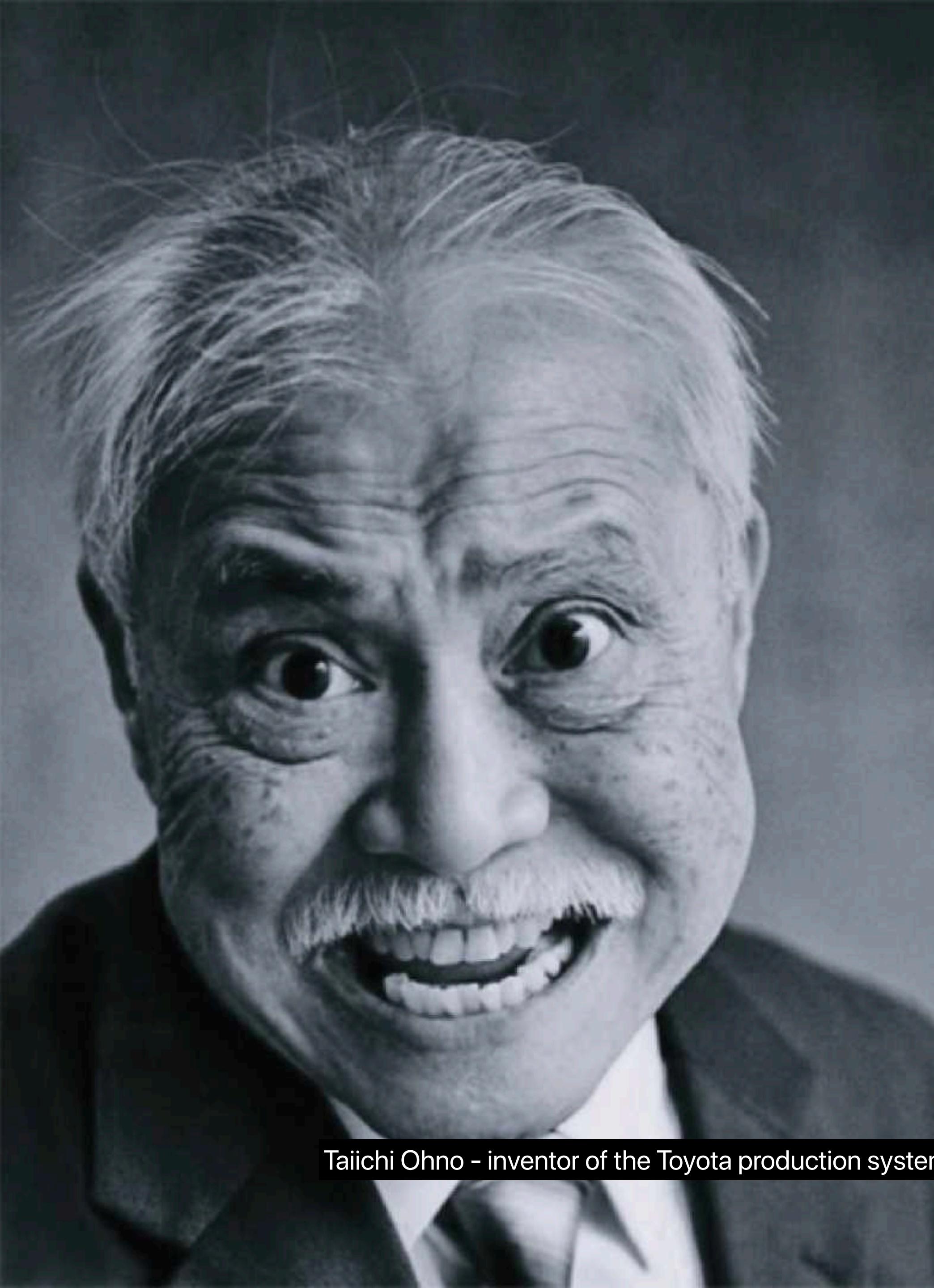
FROM A TECHNIC



TO A MACHINE



- ▶ Automation
- ▶ Robotics
- ▶ Artificial Intelligence
- ▶ Modularity
- ▶ Sanitization
- ▶ Traceability



Taiichi Ohno - inventor of the Toyota production system



ONO EXPONENTIAL FARMING
INDOOR VERTICAL AGROBOTICS AS NEVER SEEN BEFORE



LEAN FARMING

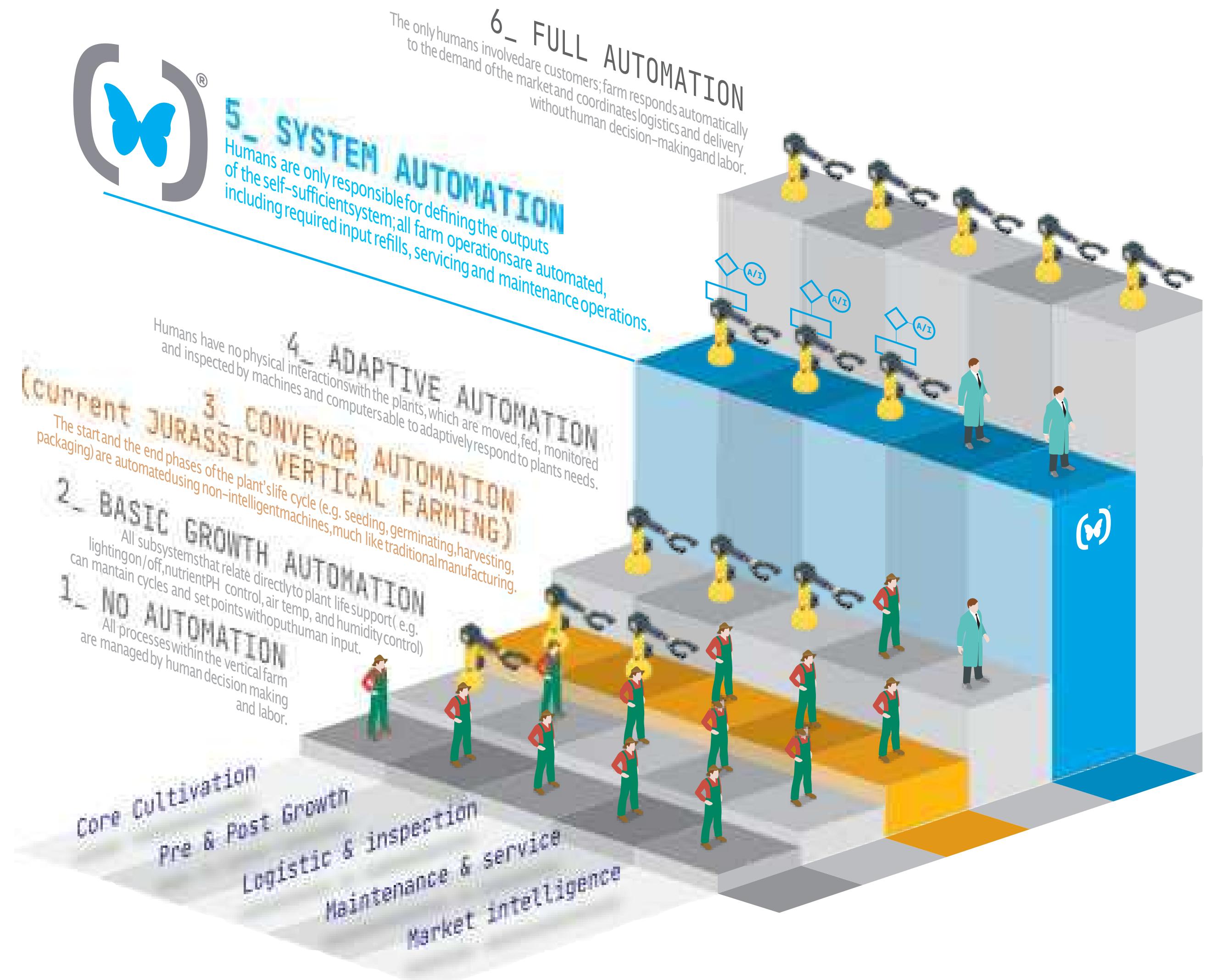
Flexible production means producing exactly **what** is needed, **when** it is needed and **where** it is needed, eliminating waste and achieving the best responsiveness for the maximum benefit to the end customer.

The best way to do this is to adopt demand-driven production, a system envisaged by **Taiichi Ohno**, a Toyota engineer who defined the rules and techniques for minimising waste in production to get the most out of it for the end customer.

ONO EXPONENTIAL FARMING'S NEW PARADIGM

ONO EXPONENTIAL FARMING
INDOOR VERTICAL AGROBOTICS AS NEVER SEEN BEFORE







ONO/EF INTRODUCES MATHEMATICS IN AGRICULTURE

Proprietary algorithms regulate the vital functions, the crop cycles, the test routines and every operational aspect of the farm.

The algorithm is constantly being developed and updated with A.I. self-learning.

A global knowledge database collects and shares local experiences with all the ONO farms around the world.



>ROOT DIRECTORY
 /refresh_connection
 /load_ALGORITHM
 /verify
 WELCOME TO ONO'S
 A/I DRIVEN AGROBOTICS.

TARGET MARKETS

ONO EXPONENTIAL FARMING
INDOOR VERTICAL AGROBOTICS AS NEVER SEEN BEFORE



FOOD.

The **Agritech market for food** was valued at US\$ 17.5 Billion in 2019 and is projected to reach US\$ 41 billion by 2027; it is expected to grow at a CAGR of 12.1% from 2020 to 2027

PHARMA.

The **global market for generic drugs** should grow from US\$ 411 billion in 2020 to US\$ 650.3 billion by 2025, at a compound annual growth rate (CAGR) of 9.6% for the period of 2020-2025.

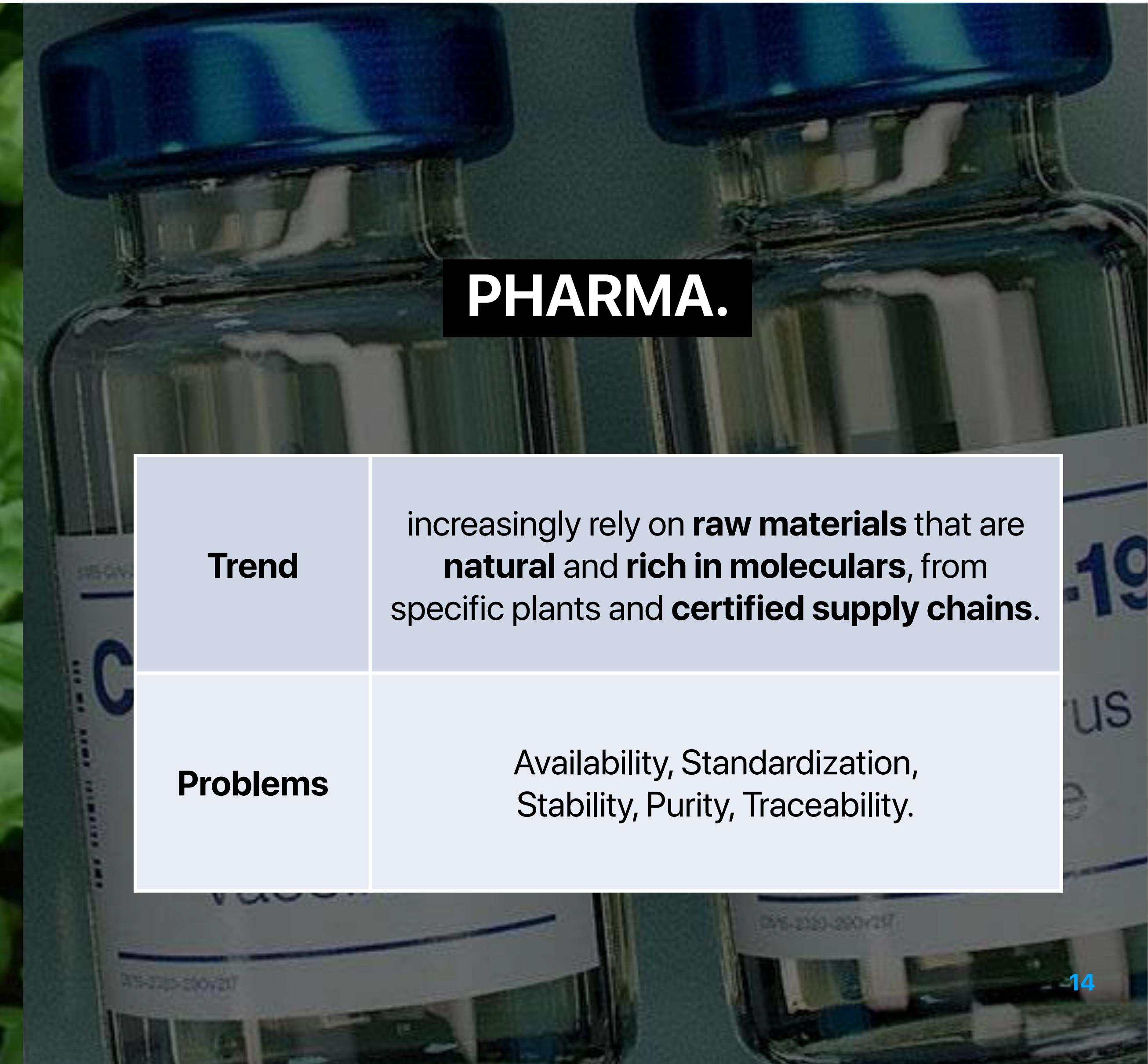
PROBLEMS TO BE SOLVED

ON EXponential FARMING
INDOOR VERTICAL AGROBOTICS AS NEVER SEEN BEFORE



FOOD.

Trend	increasingly rely on vegetables that are natural, healthy, certified supply chains .
Problems	Availability, Standardization, Stability, Purity, Traceability, Proximity.

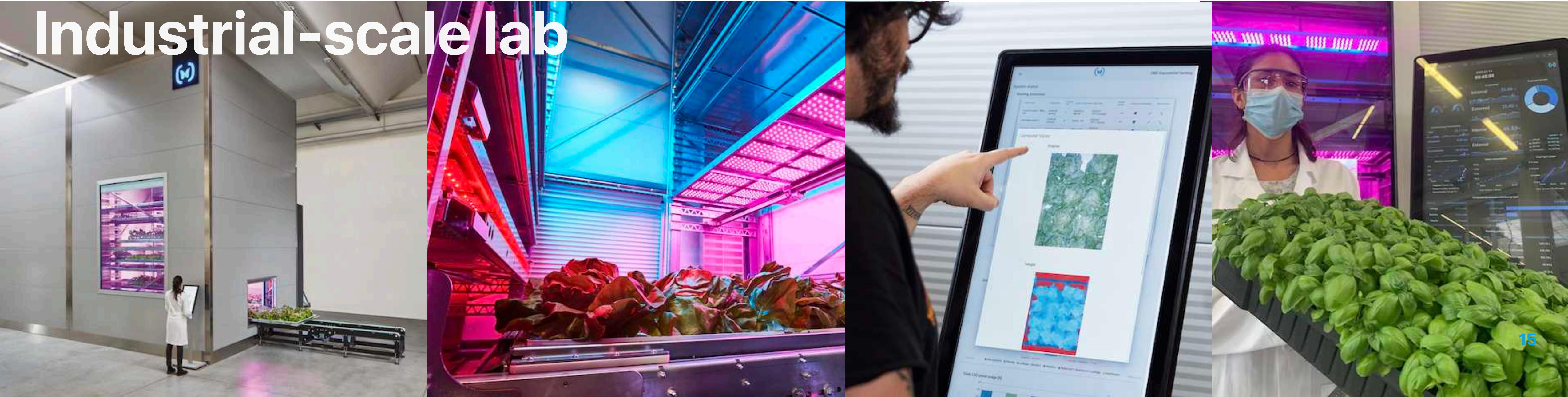


Trend	increasingly rely on raw materials that are natural and rich in molecules , from specific plants and certified supply chains .
Problems	Availability, Standardization, Stability, Purity, Traceability.



Traditional lab

Industrial-scale lab





ONO/EF module operating in Verona



THE WORLD'S FIRST AGROBOTICS PLATFORM

ONO Exponential Farming is the game-changing start-up in the Agritech sector that has developed the first "Seed-to-Pack" agrobotics business platform with which a new class of farmers can grow virtually anything, anywhere.

A secure, highly automated system for vertical cultivation, where **biotechnological innovations** are managed by **artificial intelligence algorithms**.

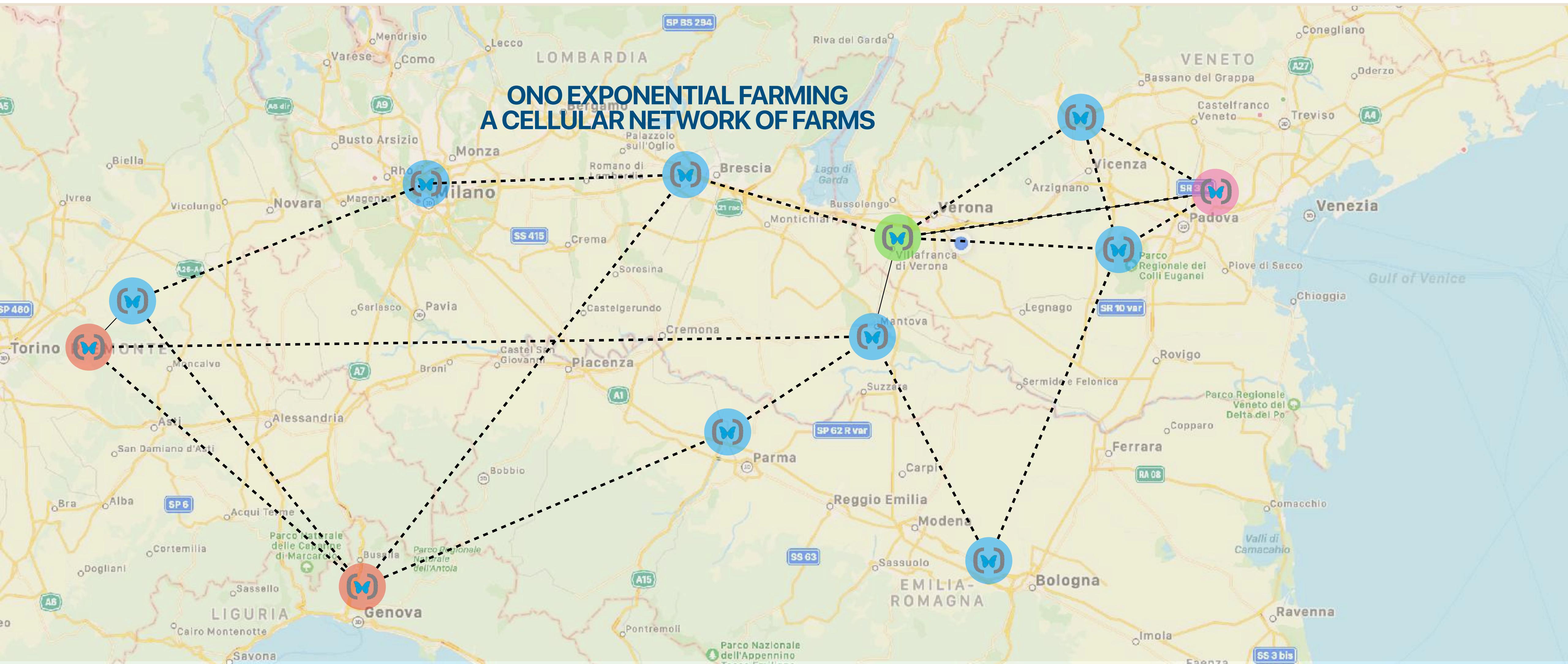
ONO/EF has created a '**better-than-organic**', fully traceable cultivation opportunity in a 'circular economy' system that **eliminates waste and pollution**, makes **better use of available water** and uses **renewable energy sources** for its operations.

ONO EXPONENTIAL FARMING'S NEW PARADIGM

ONO EXPONENTIAL FARMING
INDOOR VERTICAL AGROBOTICS AS NEVER SEEN BEFORE



ONO EXPONENTIAL FARMING
A CELLULAR NETWORK OF FARMS



ONO/EF: FARM AS A SERVICE

ONO EXPONENTIAL FARMING
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EXAMPLES OF GROWING PLANS

ONO EXPONENTIAL FARMING
INDOOR VERTICAL AGROBOTICS AS NEVER SEEN BEFORE



Parsley



Mint



Cress salad



Salad



Salad head



Dill



Catnip



Mustard



Basil



Spinach



Wild bergamot



Rucola



Tomatoes



Stevia



Aubergine



Chive onions



Purslane



Cichory



Cilantro



Cucumber



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FOCUS ON HIGH-MARGIN PRODUCTS

ONO/EF output:  every plant is a recipe.

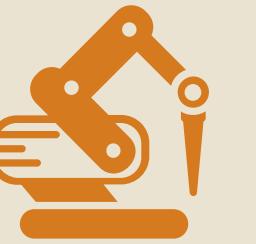
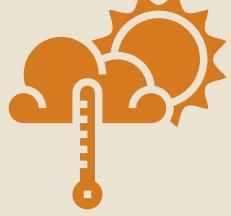
We are studying new developments every day.

Not just plants, but edible microalgae
and insects.  

THE MAGICAL RECIPE

ONO EXPONENTIAL FARMING
INDOOR VERTICAL AGROBOTICS AS NEVER SEEN BEFORE



- **EXPANDIBLE**
while running
- **FULLY AUTOMATED**
robotics + AI software
- **3X CAPACITY**
compared with fix racks
- **-30% INVESTMENT**
no distributed piping and less use of LEDs
- **-70% ENERGY**
through the use of patented technologies
- **-80% LABOUR**
saving for patented technologies
- **MICROCLIMATE**
to manage the best growing conditions
- **NUTRIENTS**
tailor made provided to each crop type and conditions
- **DATA ANALYSIS**
data collected locally analyzed centrally

ONO EF'S MAGICS

- ▶ A patented **modular** system from micro to GIGA farms
- ▶ Full robotic cultivation **automation**
- ▶ **High density** crop production (3x compared to shelves)
- ▶ Dynamic light-period (**DLP**) - different lights for different times
- ▶ Dynamic climate-period (**DCP**) - adjacent rooms with different climates
- ▶ **Fully closed-loop environment** (water and air flows are sanitised)
- ▶ **Water use reduced by 95%** compared to the field farming
- ▶ **Minimum** energy consumption (LED and Climate calibrated for volume)
- ▶ **Positive pressure** inside the box, **no incoming pathogens**
- ▶ **Tailored nutrient supply** in each cultivation tray
- ▶ **Artificial Intelligence** managed data collection and management sensors
- ▶ Proprietary **ONO/EF Farm and Programming Operating System**
- ▶ Atomic, total product **traceability** from seed to harvest
- ▶ **No manual human interaction** during cultivation
- ▶ Farms are **fully remote controllable** (full IOT based)

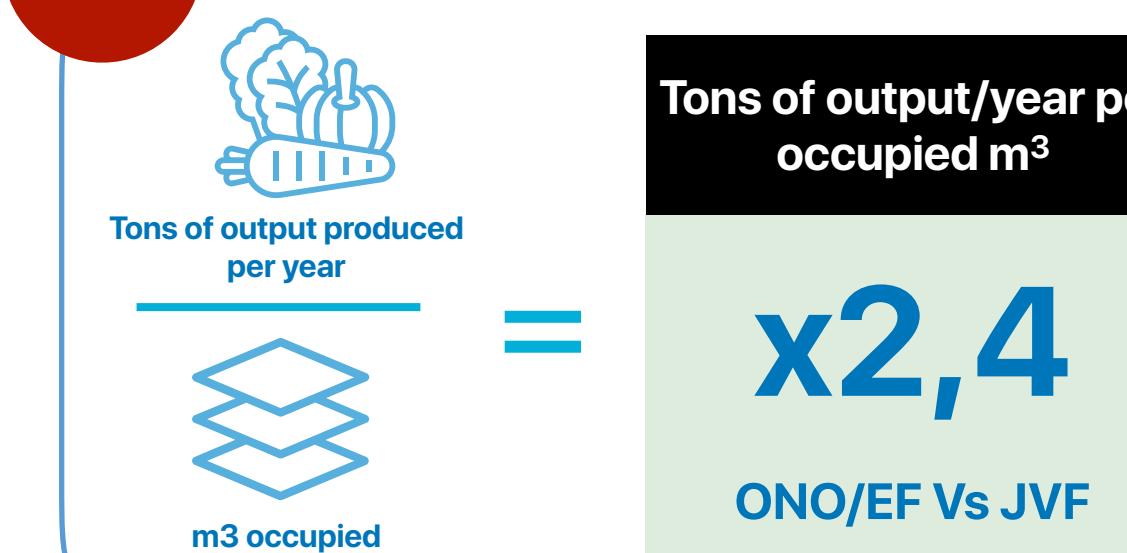


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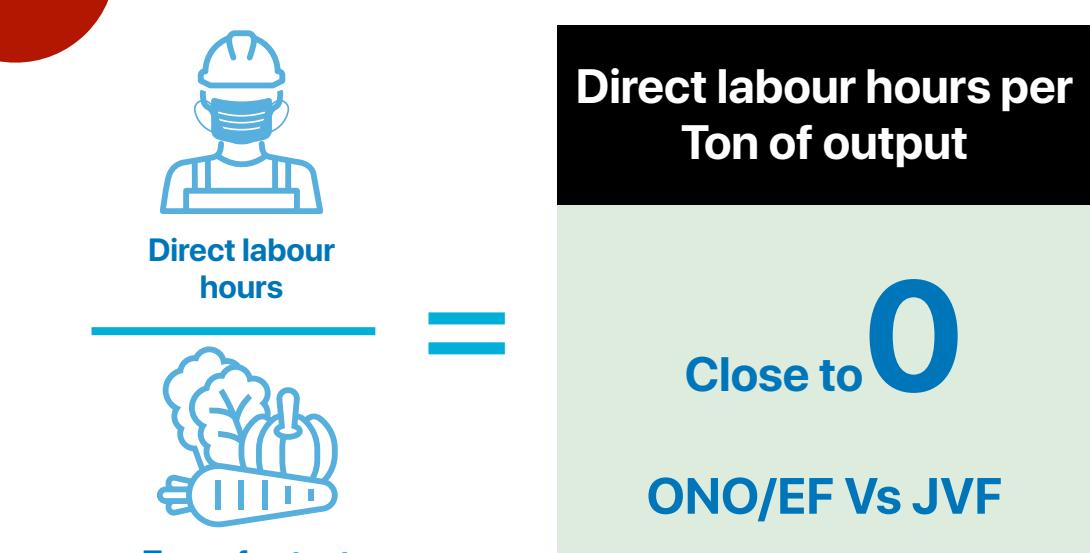


DISTINCTIVE KPI'S OF ONO/EF

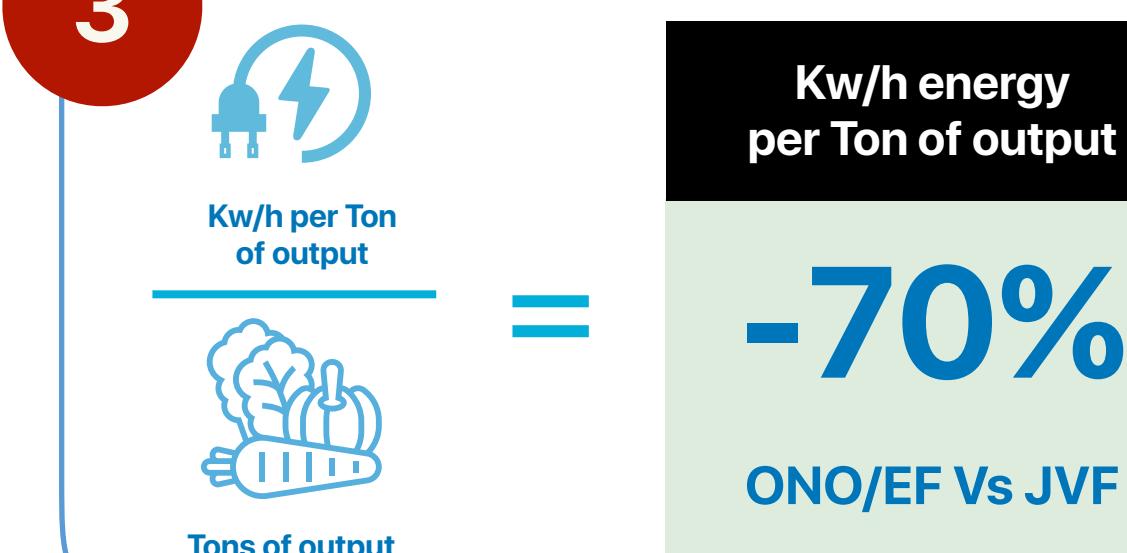
1 Productivity



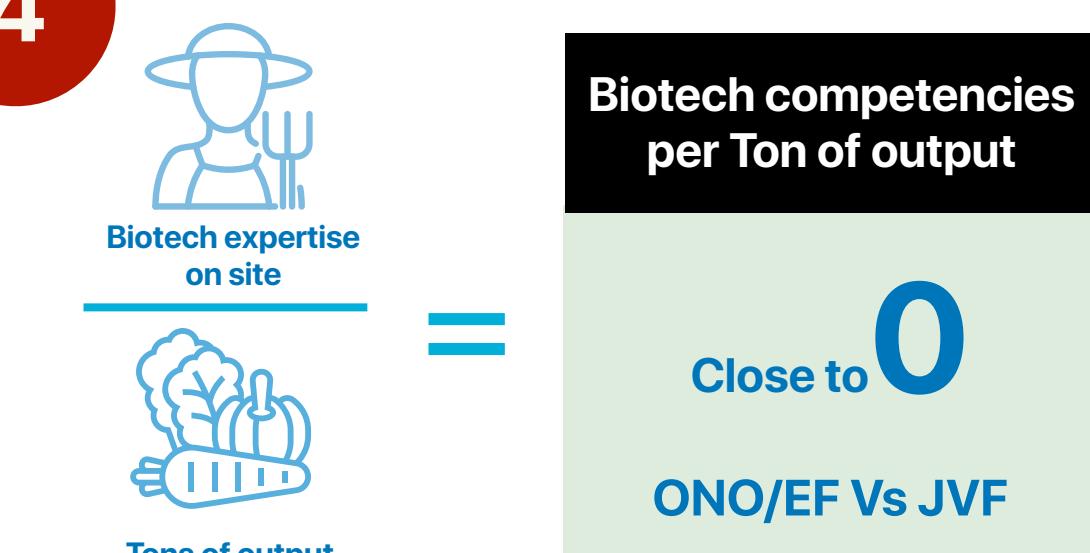
2 Direct labour



3 Sustainability



4 Agronomic skills



*JVF (Jurassic Vertical Farming) : rack systems, manual or semi-manual, open, rigid architecture, fixed spacing, high energy consumption, labour intensive, impossible to control 100%, mono environment, Capex intensive, LED everywhere, kilometers of tubes for the same nutrient, unique climate, etc.



OUR GOAL IS TO PRESERVE HUMANITY



The ONO project fulfills
12 of the "Sustainable Development Goals",
the guidelines for sustainable global development
indicated by the UNITED NATIONS.

ONO EXPONENTIAL FARMING AND SOCIAL SUSTAINABILITY

ONO EXPONENTIAL FARMING
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VALΣMOUR





ONO Exponential Farming is redefining the concept of agriculture.

We live in a world where water is an ever scarcer and more precious resource, where lands by now exhausted and polluted can no longer sustain the demands of an ever-increasing population,

where what we eat is fundamental for the protection of health.

We cannot and we will not simply stand by and watch.

The crops that come from our farms will be the fruit of **innovative** and **collaborative** production processes that will have a **positive impact** on the health both of people and of the World in which we live.

This is not a dream.

TEDx Cortina



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