

# PRESS KIT



**5TH EDITION**

"AGRICULTURAL ROBOTICS:  
PART OF THE NEW DEAL?"

[www.fira-agtech.com](http://www.fira-agtech.com)  
#FIRA20

8 > 10  
**DECEMBER**  
2020  
VIRTUAL EVENT



FIRA 2020 POWERED BY GOFAR





# #1 GOFAR

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GLOBAL ORGANIZATION FOR AGRICULTURAL ROBOTICS



## GLOBAL ORGANIZATION FOR AGRICULTURAL ROBOTICS

Association launched in April 2019.

Mission: "Promoting and developing Agricultural Robotics Industry worldwide"

### Executive Board



**Gaëtan Séverac**

*Co-Founder | Naïo Technologies*

GOFAR : President



**Alain Savary**

*General Director | AXEMA*

GOFAR : Secretary



**Julie Peyrache**

*Investment Manager | Capagro*

GOFAR : Treasurer



**Roland Lenain**

*Research Director | INRAE*

GOFAR : Vice-President  
Delegate for scientific contents

### Operationnal Team



**Maïalen Cazenave**

GOFAR : Organization



**Gwendoline Legrand**

GOFAR : Communications

## THE CORNERSTONE ASSOCIATION FOR THE PROMOTION OF AGRICULTURAL ROBOTICS

GOFAR promotes agricultural robotics to enhance the quality of agri-agro production to improve the quality of life for farmers and for the environment.

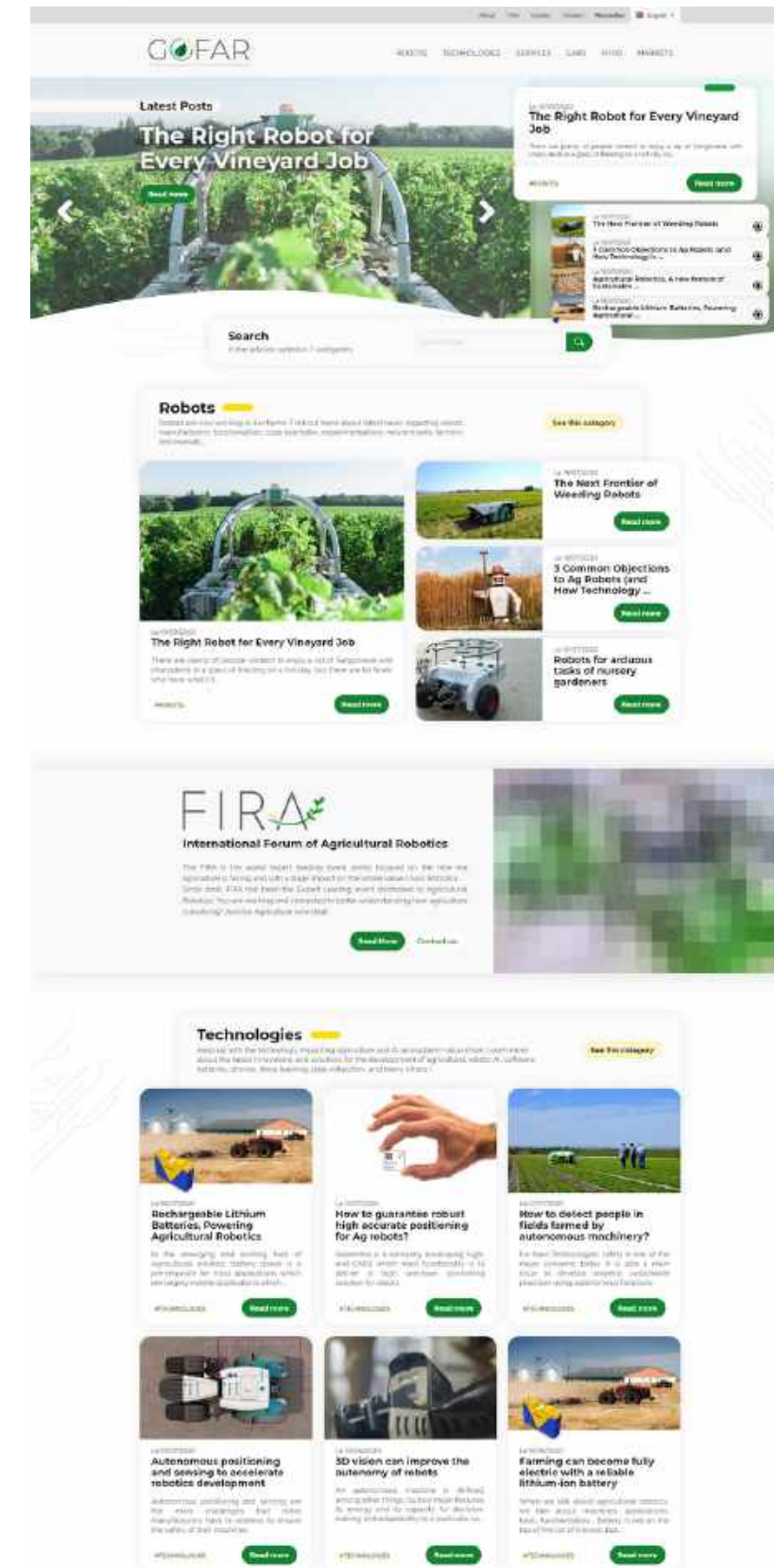
Against the background of changing production methods, GOFAR:

- Participates in the ongoing evolution of agriculture through automation,
- Develops tools and actions for collection, dissemination, collaboration, release and globalization,
- Positions the players in the sector internationally acknowledged experts,
- Promotes and deciphers the issues and trends in agricultural robotics.



## ACTIONS

- **FIRA - International Forum for Agricultural Robotics**
  - Since 2016
- **Web Media: [www.agricultural-robotics.com](http://www.agricultural-robotics.com)**
  - Launched in July 2020
  - Dedicated to the Agricultural Robotics industry
  - Monthly Newsletter > "Agricultural Robotics News"
- **Major Partnerships with Agricultural Events**
  - SIMA - Paris - 6 > 12 November 2022
    - Robotics Village by FIRA, with pitches and conferences
  - Agromek - Denmark - 9 > 22 January 2021
    - Conferences sessions on Agricultural Robotics topics
  - Agri Week Tokyo - 14 > 16 October 2020







# #2 THE AGRICULTURAL ROBOTICS INDUSTRY

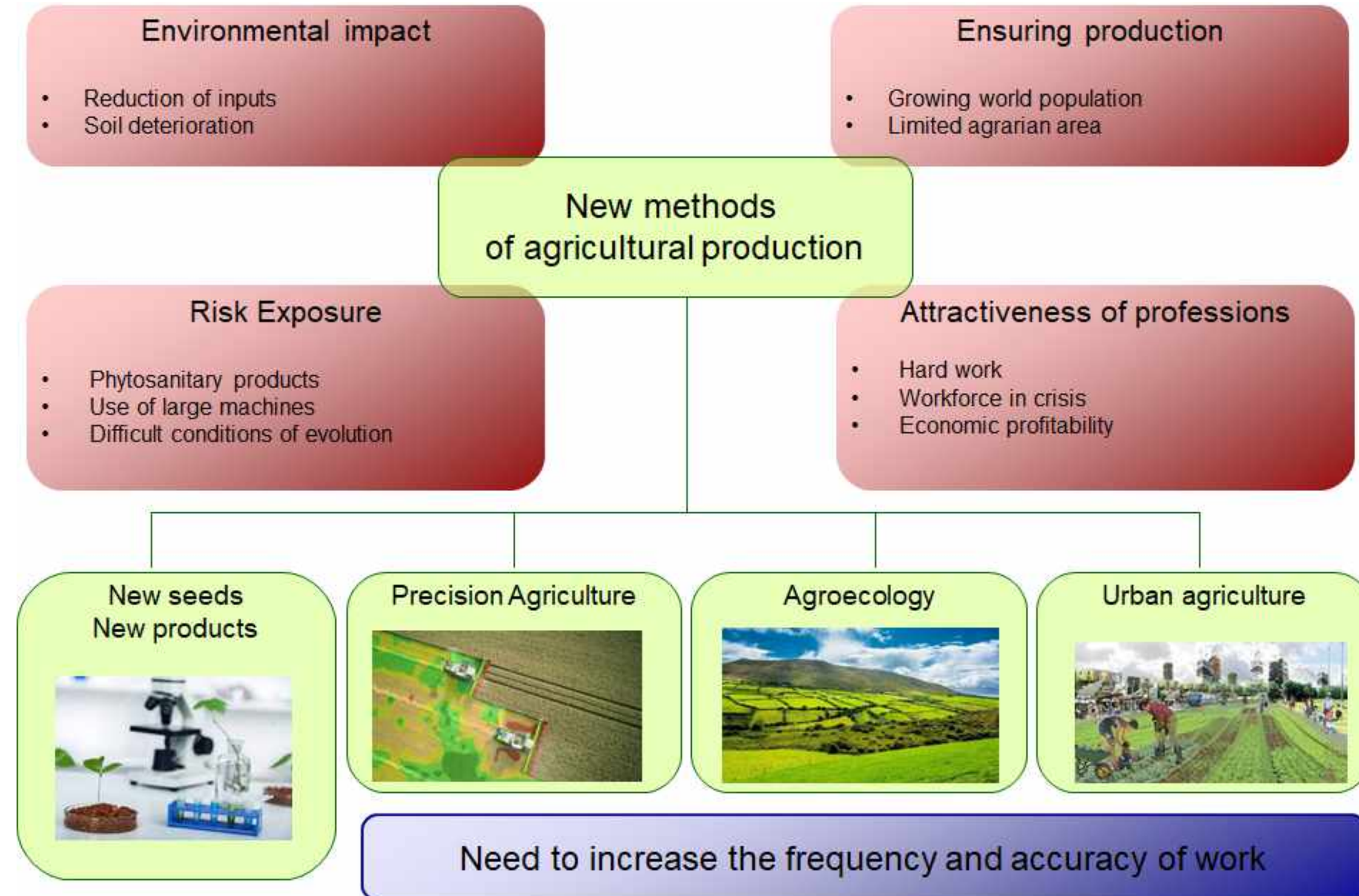
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MAIN ISSUES AND KEY FIGURES



# CONTEXTUAL ELEMENTS

## The necessary change in agriculture





# ROBOTICS FOR AGRICULTURE

## Automation of Machines and Tools

Robotic tractors



Kubota

Automated tools

GarFord



Autonomous tractors



Case Magnum



# ROBOTICS FOR AGRICULTURE

## Small Elementary Robots

Mechanical weeding



Dino

Mowing robot

Input Limitation



VitiRover

Ecorobotix





# ROBOTICS FOR AGRICULTURE

## Towards Modular Robots in test

Tools holder robot



PumAgri

Spray robot

Crop evaluation



VitiBot

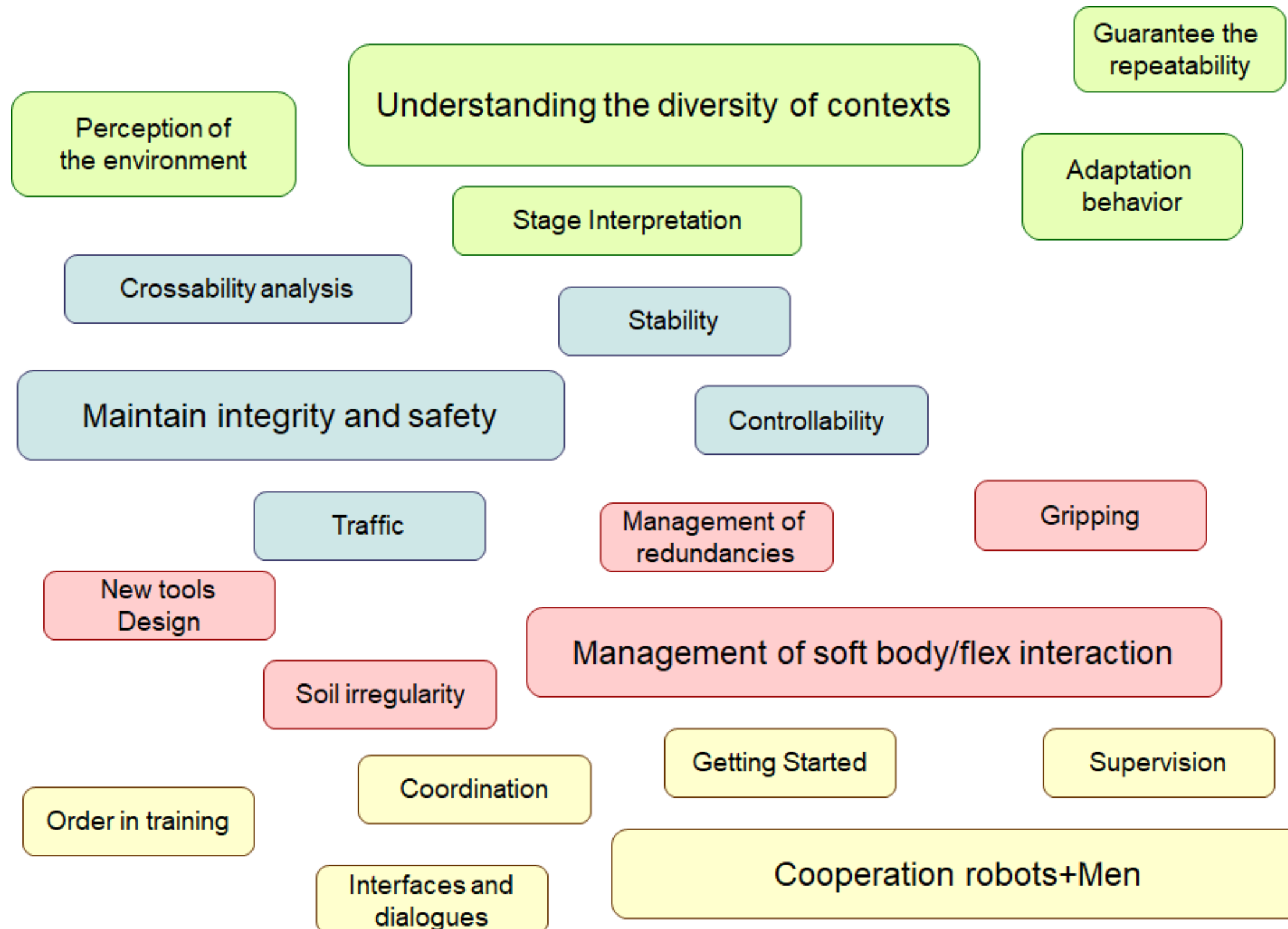
Centéol





# SCIENTIFIC AND TECHNOLOGICAL LOCKS

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# KEY FIGURES

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## ECOLOGICAL & LEGAL

- UE's ambition: **reduce the risks and use of pesticides by 50% by 2030**
- European Crop Protection Association (ECPA)' commitments: investing more than 14 billion euros in precision agriculture, digital technologies and biopesticides by 2030
- Precision action (spraying, mechanical, or electrical) **reduces consumption of agrochemicals, e.g., by 90%**, and boosts yield by cutting herbicide-induced collateral damage, e.g., by 5-10%

*(Source: IdTechEx)*

## SOCIAL

- Aging farm workers
- Labor shortages: -3.2% agricultural workers in EU

*(Source Agro Innovation Lab by BayWa and RWA)*



# KEY FIGURES

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## ECONOMICAL

- Estimation of worldwide Agfield **robots number in operation: 492**
- **16 players** hold 90% of the market

*(Source Naïo Technologies)*

- **Largest markets in 2019:**
  - 1st: USA
  - 2nd: Europe

*(Source Agro Innovation Lab by BayWa and RWA)*

- **\$30 billions annual market volume of chemical weeding applied with standard sprayers**

*(Source Ecorobotix)*

- Global market size of agricultural robotics in **2020: \$8 billion** (vs \$4,7 billion in 2018)
- Expected market size by **2025** of more than **\$18 billion** +21% of CAGR

*(Source <https://my.pitchbook.com/market-size-estimates/35770>)*

- **\$ 179 billion invested** in Farm robotics Mechanization and other farm equipment in 2019, representing 1% of Agri-Foodtech Investment

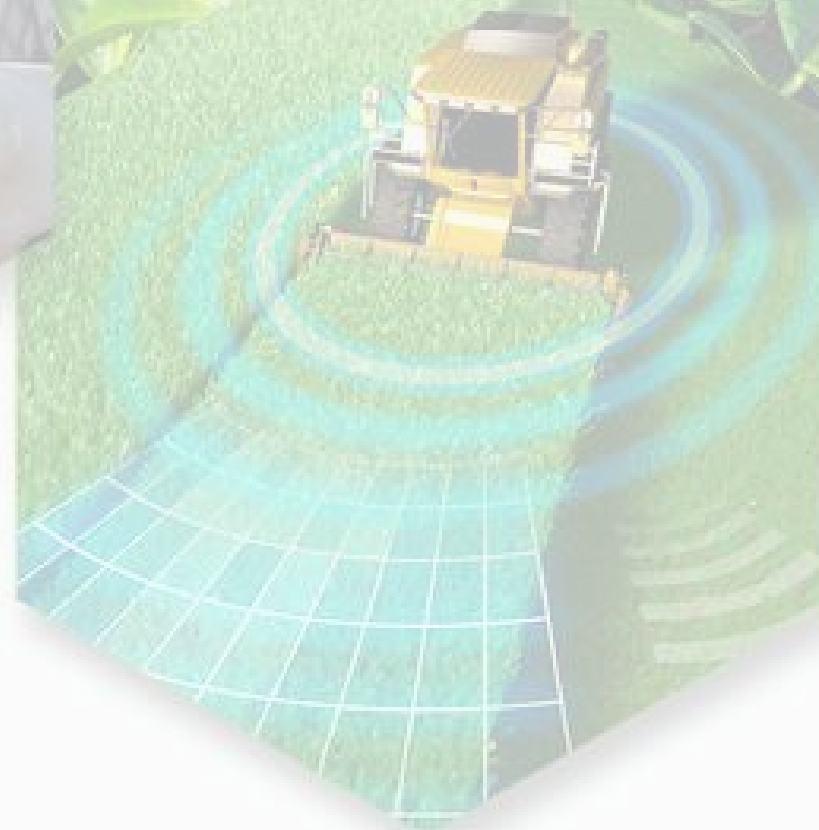
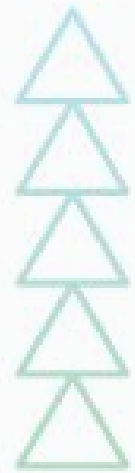
*(Source AgFunder)*



8 > 10  
**DECEMBER**  
2020  
VIRTUAL EVENT

# #3 FIRA 2020

THE EXPERT LEADING EVENT OF THE AGRICULTURAL ROBOTICS  
INDUSTRY





# FIRA at a glance...

THE EXPERT LEADING EVENT OF THE AGRICULTURAL ROBOTICS INDUSTRY



**2016**

**WHO?**

**200** physical attendees  
**50** online attendees  
**5** robot manufacturers  
**10** countries

**WHERE?**

EIP School of Engineers  
Toulouse

**2017**

**WHO?**

**400** physical attendees  
**250** online attendees  
**10** robot manufacturers  
**18** countries

**WHERE?**

Quai des Savoirs  
Toulouse

**2018**

**WHO?**

**650** physical attendees  
**480** online attendees  
**12** robot manufacturers  
**31** countries

**WHERE?**

Diagora Congress Center,  
Toulouse

**2019**

**WHO?**

**800** physical attendees  
**1200** online attendees  
**25** robot manufacturers  
**42** countries

**WHERE?**

Diagora Congress Center,  
Toulouse

**2020**

**WHO?**

**3000** online attendees  
**35** robot manufacturers  
**100** countries

**WHERE?**

ONLINE  
Worldwide





3,000  
PARTICIPANTS



35  
ROBOT  
MANUFACTURERS

15  
DEMOS OF ROBOTS



3  
DAYS

50  
EXHIBITORS



10  
INTERNATIONAL HUBS  
HOSTING FIRA



50  
INTERNATIONAL  
EXPERT SPEAKERS



30,000  
QUALIFIED CONTACTS  
(NEWSLETTER)

5,723  
FOLLOWERS  
(SOCIAL MEDIAS)





# FIRA 2020 GOES VIRTUAL!



Since 2016:

- FIRA, in Toulouse, south of France
- 25% international participants - 42 countries

## WHY GOING VIRTUAL?

- Globalization of the event: +100 countries
- Access to any key player of the industry, anywhere in the World
- Positioning FIRA as a dynamic and innovative event
- FIRA: the only agtech event in 2020 (?)
- Pandemic Crisis...

**Make FIRA 2020  
THE dedicated social media for Agricultural Robotics key players.**

## WHAT ABOUT FIRA 2021?

FIRA 2021 will play as an hybrid event, both physical and virtual.



# FIRA 2020

## GENERAL INFORMATION



### OPENING HOURS

December 8 to 10, 2020  
From 8.00 am to 10 pm - UTC/GMT +2 hours

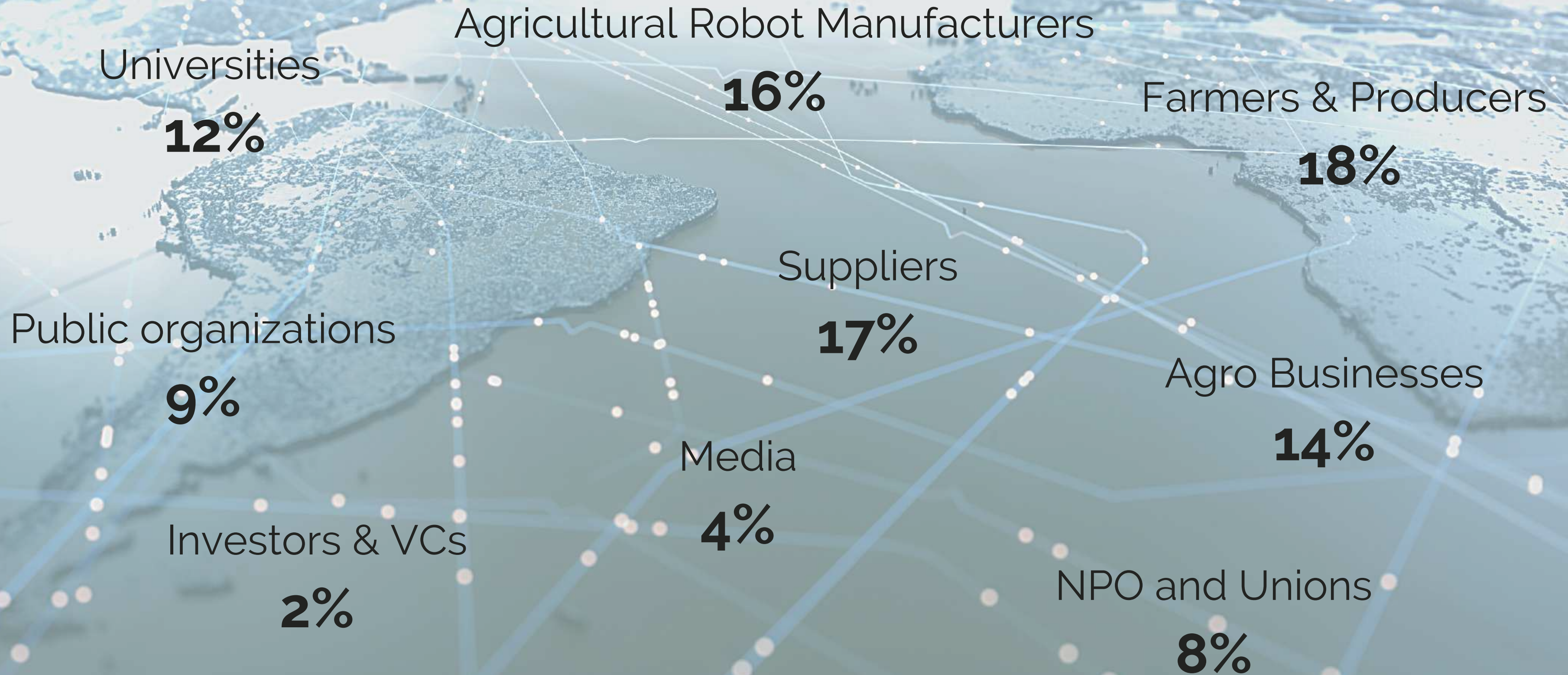
Virtual Platform with "On demand" contents: open until July 2021

### FIRA Tickets

Type	Dates	Price
Early Bird	until 30 Sept. 2020	€ 99
Regular ticket	from 1st Oct. 2020	€ 150
Late	from 1st Dec. 2020	€ 299
Farmers	until 8 Dec. 2020	Free *



# PARTICIPANTS TYPES







# FIRA 2020

## GLOBALIZATION STRATEGY

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### National Ambassadors to promote FIRA in their own countries:

- **USA:** Jim Sulecki, freelance agent
- **JAPAN:** EU-Japan Centre for Industrial Cooperation
- **AUSTALIA:** SPAA Society of Precision Agriculture Australia
- **TURKEY:** Tarmakbir
- **SLOVENIA:** Agrifood - ITC
- **IRELAND:** The Yield Lab
- **BRAZIL:** ABIMAQ
- **ISRAEL:** Volcani Institute
- **ROMANIA:** IND-AGRO-POL
- **SPAIN:** FEMAC
- **FRANCE:** Agronov, Université de Montpellier...

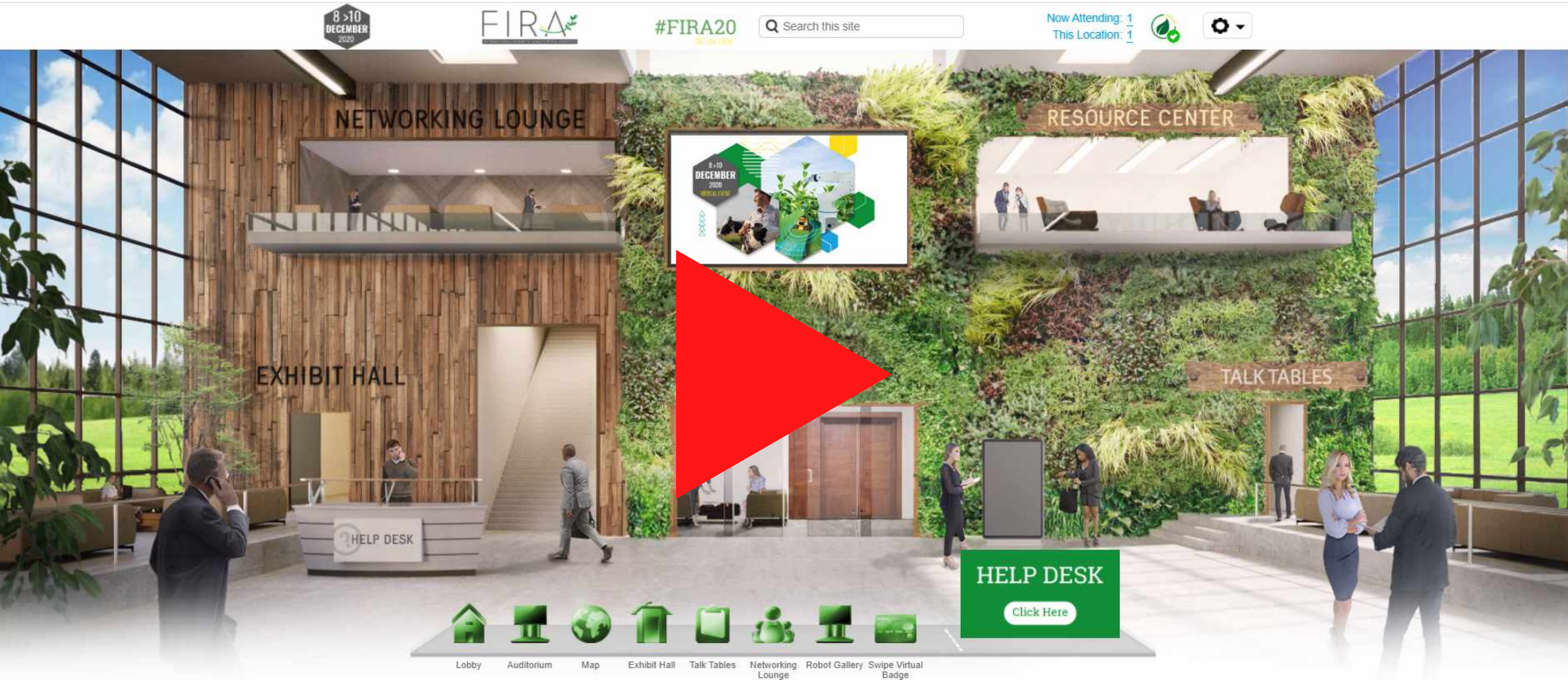
AMBITION:

create a global ecosystem for agricultural robotics



# FIRA 2020: VIDEO TOUR

<https://youtu.be/tnZMsG7P65U>





# 2020 TOPIC:

## "Agricultural Robotics: Part of The New Deal?"

### CONFERENCES & ROUND TABLES:

This year is marked by the Covid-19 pandemic and the global confinement it has led to and we have all faced. This unprecedented situation impacts the agricultural production and further conveys the difficulties of a sector that is demanding but undergoes labor shortage.

In that light, how can robotics provide an appropriate and alternative response, without neglecting its integration into an unusual social, economic and environmental context?

The international speakers selected for their expertise will be featured to share their vision and exchange with the participants.

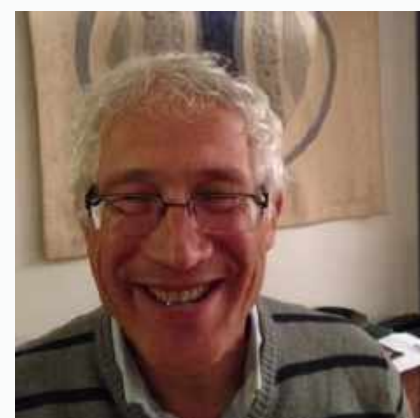




# 2020 TOPIC:

## "Agricultural Robotics: Part of The New Deal?"

### SPEAKERS



**Guy WAKSMAN**

(France)

**French Academy of  
Agriculture**

Member



**FAO**

**Food And Agriculture  
Organization**  
(under validation)

### CONFERENCE:

#### PART 1 FOOD & FARMING

#### How is agricultural robotics impacting the new deal, the economy & social issues?

The confinement we had to face severely impacted the agricultural world: indeed, the labor shortage related to the closure of borders, combined with difficulties in movement of the national workforce, hit the 2020 season hard. Where do we stand with the food and agriculture situation in the world ? Robotics could be an appropriate response, but may face certain obstacles. What is the place of agricultural robotics in this context? How can it be implemented in a world in transition while offering a positive alternative? Should we be afraid to automate certain agricultural tasks given the current economic and social context, or is robotics one of the keys to getting out of the crisis in the agricultural world? The two successive speakers at this conference will, on the one hand, take stock of the world food situation in 2020, followed by the place of agricultural robotics in this context, on the other hand.

# 2020 TOPIC:

## "Agricultural Robotics: Part of The New Deal?"

### SPEAKERS



**Daniel AZEVEDO**

(France)

**Copa-Cogeca**

Director Commodities,  
Trade and Technology



**Christophe BONNO**

(France)

**Groupe Les  
Mousquetaires-  
Intermarché**

Director of Agricultural  
Institutional Relations



**Ole GREEN**

(Denmark)

**AGROINTELLI**

Founder & CEO

### ROUND TABLE DEBATE:

#### PART 2 SOCIETY

#### "How to go from "robot bashing" to "robot loving", for the end consumer?"

The major innovations in the agricultural world have a significant impact on the beliefs (founded or not) of end consumers. In order to avoid repeating the mistakes of the past, and the possible societal debates that could lead to the "robot bashing", it is crucial to involve the entire value chain from the design phase to its use, for the benefit of the consumer.

- Should robotics be part of a marketing strategy for agribusinesses?
- What would be the levers of robots on the environment, social and food quality?
- How can robotics be integrated in a relevant and sustainable way within food production
- What are the roles to be played by each of the stakeholders to contribute to the valorisation of agri-food products in terms of information?
- How robotics can provide the right traceability needs?

This round table will be an opportunity for the speakers to share ideas to understand, together, the place and the contribution of robotics in the production of quality agro-food goods.



# SPEAKERS

## 2020 TOPIC:

## "Agricultural Robotics: Part of The New Deal?"

### ROUND TABLE DEBATE:

### PART 3 TECHNOLOGIES

#### Farming without a tractor driver, is it possible?

The automation of field tasks leading to the advent of a new agricultural production represents a significant challenge in the organization of the sector.

- What about the current safety and liability issues?
- What will this change in the professions of each player?
- From the technology supplier to the dealer, through agro-supply, how will the market and the legislation have to adapt?
- For each of them, what does an agricultural world in which tractor drivers no longer exist mean?



**Andrea BERTOLINI**  
(Italy)  
**Scuola Superiore  
Sant'Anna**  
Lawyer specialised in  
Robotics



**Aymeric BARTHES**  
(France)  
**Naïo Technologies**  
CEO



**Gordon CLEMENTS**  
(Germany)  
**VARTA AG**  
General Manager  
Solutions



**Laurent CHATELAIN**  
(France)  
**Chatelain Nursery**  
Owner



**Greg MEYERS**  
(Switzerland)  
**Syngenta**  
CIO / CDO



# SPEAKERS



**Michael DENT**  
(UK)  
**IDTechEx**  
Technology Analyst



**Seana DAY**  
(USA)  
**Better Food Ventures  
& The Mixing Bowl**  
Partner



**Peter HANAPPE**  
(France)  
**SONY CSL**  
Researcher



**David BOWLES**  
(Ireland)  
**The Yield Lab**  
Venture Capital  
Investor



**W. Wade ROBEY**  
(USA)  
**Raven Autonomy**  
Executive Director  
**Dot**  
General Manager



**Erik PEKKERET**  
(The Netherlands)  
**Wageningen University &  
Research**  
Programme Manager Agro Food  
Robotics



**Tom ESPIARD**  
(France)  
**Capagro**  
President & Managing  
Partner

## 2020 TOPIC:

### "Agricultural Robotics: Part of The New Deal?"

## CONFERENCE & ROUND TABLE DEBATE:

### PART 4 MARKET

#### From labs to success stories, which business model for ag robots?

Agricultural robot projects are as different in their applications and functionalities as they are in their very nature: project from Research Center, young start-up, large group spin-off, dedicated R&D department among the historical leaders of the , ... But ultimately, who will "win the race"? And with what funding and business model?

Dr Khasha Ghaffarzadeh, Research Director at IdTechEx, will present the outlook of the agricultural robotics market from 2020 to 2030, as well as the different business models available to manufacturers.

Then, the speakers of the Round Table will try to describe their own development models and the advantages / disadvantages they entail:

- Which agricultural robot development models?
- Which business models? Which constraints to face?
- Which system will be the most successful and why?



# +30 Agricultural Robots, part of the new deal!

## THEMATIC WORKSHOPS

### FRUITS & VEGETABLES

With: SITIA, Farmwise, AGERRIS...

### VINEYARDS

With: Naïo Technologies, Vitibot...

### FIELD CROPS

With: Ecorobotix, Odd.bot, Terraclear...

### BREEDING

With: Faromatics, Tibot...

## ROBOT DEMOS

**Naïo Technologies** (France)

**VitiBot** (France)

**Ecorobotix** (Switzerland)

**Agrointelli** (Denmark)

**SITIA** (France)

**SwarmFarm** (Australia)

**Agreenculture** (France)

**Ztractor** (USA)

**WeedBot** (Latvia)

**INRAE Occitanie Toulouse** (France)

**PixelFarming** (The Netherlands)

**SONY CSL** (France)





# WORKSHOP

## Robots for Vineyards

8 DECEMBER 11:30 - 12:30 AM

### PART 1. EXPERIMENTATION (20 min)

[Naïo Technologies \(FR\)](#): Ted, multifunctional vineyard weeding robot

### PART 2. PITCHES (5 min/pitch)

[SITIA \(FR\)](#): Trektor, dTrektor, innovative design and versatility that allows to work different cultures such as viticulture.

[Korechi Innovations Inc. \(CA\)](#): RoamIO - an autonomous farming platform which can be easily programmed to perform a range of different tasks in vineyards, orchards and grain farms.

### PART 3. FEEDBACKS (20 min)

Feedback from farmers and sharing of their user needs.





# WORKSHOP

## Robots for Breeding

9 DECEMBER 10:30 - 11:30 AM

### PART 1. EXPERIMENTATION (20 min)

[Wageningen University & Research \(NL\)](#): Breeding and the importance of phenotyping for reproduction

By Rick van de Zedde, roject Coordinator - Netherlands Plant Eco-phenotyping Centre

### PART 2. PITCHES (5 min/pitch)

[Faromatics \(ES\)](#): ChickenBoy robot for better animal welfare and more farm productivity of broiler farms.

[TIBOT Technologies \(FR\)](#): Spoutnic, the first autonomous robot for poultry farming.

### PART 3. FEEDBACKS (20 min)

Feedback from farmers and sharing of their user needs.







# WORKSHOP

## Robots for Field Crops

9 DECEMBER 6:00 - 7:00 PM

### PART 1. EXPERIMENTATION

Ecorobotix (CH)

### PART 2. PITCHES (5 min/pitch)

Odd.Bot (NL) : Weed Whacker: mechanical weeding robot for usage in sowing crops for arable farming

F.Poulsen Engineering (DK): ROBOVATOR automatic weeding machine

Terra Clear (USA): fully autonomous picking robot that is deployed in the field with minimal operator intervention.

### PART 3. FEEDBACKS (20 min)

Feedback from farmers and sharing of their user needs.





# WORKSHOP

## Robots for Fruits & Vegetables

10 DECEMBER 3:30 - 4:30 PM

**PART 1. EXPERIMENTATION (20 min)**

SITIA (FR)



**PART 2. PITCHES (5 min/pitch)**

**AGERRIS (AU):** Digital Farmhand - an easily modifiable, long endurance, electric platform fitted with smart sensing and tools for real time crop and soil intelligence, and automated weeding.

**FarmWise (USA):** Titan FT-35 - distinguishes vegetable crops from harmful weeds using computer vision and removes weeds with mechanical tools down to one centimeter of precision.

**Automato Robotics (IL):** Affordable robot for harvesting greenhouse tomatoes. Autonomously drives, maps and navigates in the greenhouse. Then detects, harvests and collects the tomatoes.



**PART 3. FEEDBACKS (20 min)**

Feedback from farmers and sharing of their user needs.



# SPEAKERS



**Joaquin REYES**  
(Czech Republic)  
**European GNSS Agency (GSA)**  
Market Development Technology Officer



**Hajar Mousannif**  
(Morocco)  
**Cadi Ayyad University**  
Professor Artificial Intelligence | Machine Learning

**HEXAGON / NOVATEL**



# WORKSHOP

Safe positioning and image analysis: are technologies reliable enough for autonomous works in fields?

**8 DECEMBER 7:00 - 8:00 PM**

## PART 1 - Safe Positioning

Precision is the key to make robot work safely in the fields; with no reliable signal, the robot can be out and producers would not even know!

- How to physically complete the GPS signal?
- How to guarantee that the robot is still on the field and the signal reliable?
- How to detect early enough that the robot is driving out of the field?

Speakers at this workshop will answer concrete user cases and present the latest advances for an accurate and reliable localisation of off-road robots, a safety issue

## PART 2 - Image analysis

Artificial vision and innovative sensors allow plant recognition for an autonomous and accurate treatment. The image analysis, available through data collection and a relevant machine learning system, has now hold a unprendent level.

- What is the limit of the image analysis to detect small weed from small plant?
- Which robot guidance from images?
- From R&D to the field application, how to deploy these technologies?

Speakers will present concrete cases, their issues and solutions.



# 2nd SCIENTIFIC WORKSHOP

## "Adaptation of robots behavior for an efficient use in agriculture"

Organized by  RobAgri



### AMBITION:

Bring together the scientific community of agricultural robotics and bring it closer to the industrial community

### PROGRAM:

**Session 1 //** Robot decision for adaptation to human behavior, off-road and task diversity, and safety preservation

**Session 2 //** Human – robot interaction and cobotic application for agriculture

**Session 3 //** Implement automation and coordination with robots for agriculture tasks achievement

### CALL FOR PAPERS:

All contributions within the scope of the scientific days are welcome. Oral presentations will be selected by the scientific and technical committee, through abstract proposal.

Please send a **1 page abstract proposal by October, 31st 2020** at following address:

Fira2020.conference@gmail.com





# FIRA 2020 FULL PROGRAM

... Under construction



mar. 8	mer. 9	jeu. 10
9 AM FIRA 2020 Surprising Opening		
10 AM FOOD&FARMING: How does agricultural robotics impact on the new deal - economics & social issues? 9:15 – 10:45am	Pitch: How to use laser to elimin... SESSION 2: Scientific Workshop by Robagri - Human – robot interaction and cobotic applicati... 9 – 10:30am	TALK TABLE 2 - UE/JAPAN Colla... 9am DEMO Sony CSL
11 AM DEMO Naio Technologies	WORKSHOP "Robotics for Breeding" 10:30 – 11:30am	DEMO: by Sitia
12 PM WORKSHOP "Robotics for Viticulture" 11:30am – 12:30pm	DEMO Ecorobotix	DEMO WeedBot - Laser weeding - accurate weeding close to crop
1 PM DEMO Demonstration of Bakus by VitiBot (2 versions) By VITIBOT	DEMO: Proof your future with Pixelfarming Robot One	DEMO Agointelli
2 PM SESSION 1: Scientific Workshop by Robagri: Robot decision for adaptation to human behavior, of... 2 – 3:30pm Pitch Septentrio	TECHNOLOGIES: "Farming with no tractor driver, is it possible?" 2 – 3:30pm	SESSION 3: Scientific Workshop by Robagri - Implement automation and coordination with robots for agriculture tasks achievement 1:30 – 3pm
3 PM DEMO CTIFL		
4 PM SOCIETY: "How to go from "robot bashing" to the "robot loving", for the end consumer?" 4 – 5:30pm	JCA Electronics Webinar: Key Considerations in Taking the leap from R... 4 – 5pm	WORKSHOP "Robotics for Fruits & Vegetables" 3:30 – 4:30pm
5 PM	DEMO: Presentation of a unique high-throughput phenotyping robot th...	GO TO MARKET: "From the lab to the success story: what organization within the industry?" 4:45 – 6:15pm
6 PM DEMO: Bearcub 24: The World's First Autonomous Electric Tractor by ...	WORKSHOP "Robotics for Field Crops" 6 – 7pm	ECOSYSTEM Round Table: "How a territory ecosystem helps the development of Agricultural Robotics" 6:30 – 7:45pm
7 PM TALK TABLE 1 - International - Di... 7pm WORKSHOP Safe positioning an... 7 – 8pm		FIRA 2020 Closing
8 PM		



# Press Releases 2020

## PARTNERS

*To download Press Releases, please click on the links below*



**"Naïo Technologies reveals the new version of its Ted robot for working in the vineyards"**

**"VARTA supplies lithium-ion batteries for agricultural robots"**

**"Our strong point: high-precision spraying"**

**"Trektor, the hybrid autonomous tractor developed by SITIA"**

**"From Research to Farmer: consolidating the agricultural robotics sector"**

**"Hexagon furthers autonomy in agriculture through new positioning and sensing kits demonstrated by pioneering R&D tractor"**



# FIRA 2019

## Some Speakers and Partners Feedbacks...



*Many thanks again for inviting me to the FIRA. I wanted to underline your fantastic organization. FIRA was likely the best organized conference I have ever been at (and I have been at many). I greatly appreciated the professional yet personal and cordial atmosphere. And I learned a lot! Hope to come back next time.*

**Prof. Dr.-Ing. Peter Pickel, Manager External Relations, Deputy Director, JOHN DEERE**

*It was a pleasure for me to take part in this event. It is impressive to see how much interest there is in the field of robotics for agriculture and how many research groups are starting to contribute to it.*

**Prof. Andrea Gasparri Associate Professor Dipartimento di Ingegneria, Università degli studi "Roma Tre"**

*VARTA are committed to Agricultural Robotics and we have met many great partners who we will be working with over the coming months to generate better battery solutions for their applications.*

**Gordon Clements, General Manager, POWER & ENERGY VARTA AG**



# FIRA 2020 PARTNERS



## PREMIUM



## GOLD



**HEXAGON**



**NovAtel**



# FIRA 2020 PARTNERS



## STANDARD

AGROINTELLI



EASTON ROBOTICS, LLC



## EVENTS



## FRIENDS







## YOUR CONTACT

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