



*EXPO 2015 Project:  
Agriculture of Tomorrow  
Demo Field for Sustainable Production Systems*

World **population is growing** at rapid pace, expected to exceed 9 billion in 2050



This will strain the already **limited natural resources**:

- ✓ water
- ✓ energy
- ✓ arable land

To feed the planet we need to **change the way** these **resources are used in agriculture**



**Efficiency is the key** to fight:

- ✓ water shortage
- ✓ food scarcity
- ✓ poverty

A strong commitment to research, innovation and entrepreneurship is needed **to achieve sustainable productivity**

# LoDI2015 aims to combine expertise, technologies and solutions for sustainable agriculture



Within the framework of EXPO2015, Lodi has launched the **Lombardy Demonstration Initiative** (LoDI2015) to promote:

- ✓ knowledge exchange
- ✓ technology transfer
- ✓ business opportunities

Lodi, 30 km South-East of Milan, is the first stop into the Po Valley food district

# Agriculture of tomorrow: a demo field with 3 main objectives



- ✓ **Present innovative approaches** and technologies to sustainable smallholder agriculture, adopting a staple food value chain approach;
- ✓ **Promote rational and efficient use** of resources, showing innovation trends for different crops and agricultural conditions;
- ✓ **Focus on drip irrigation as key** element to increase efficiency and sustainability in agriculture.

*Objectives*

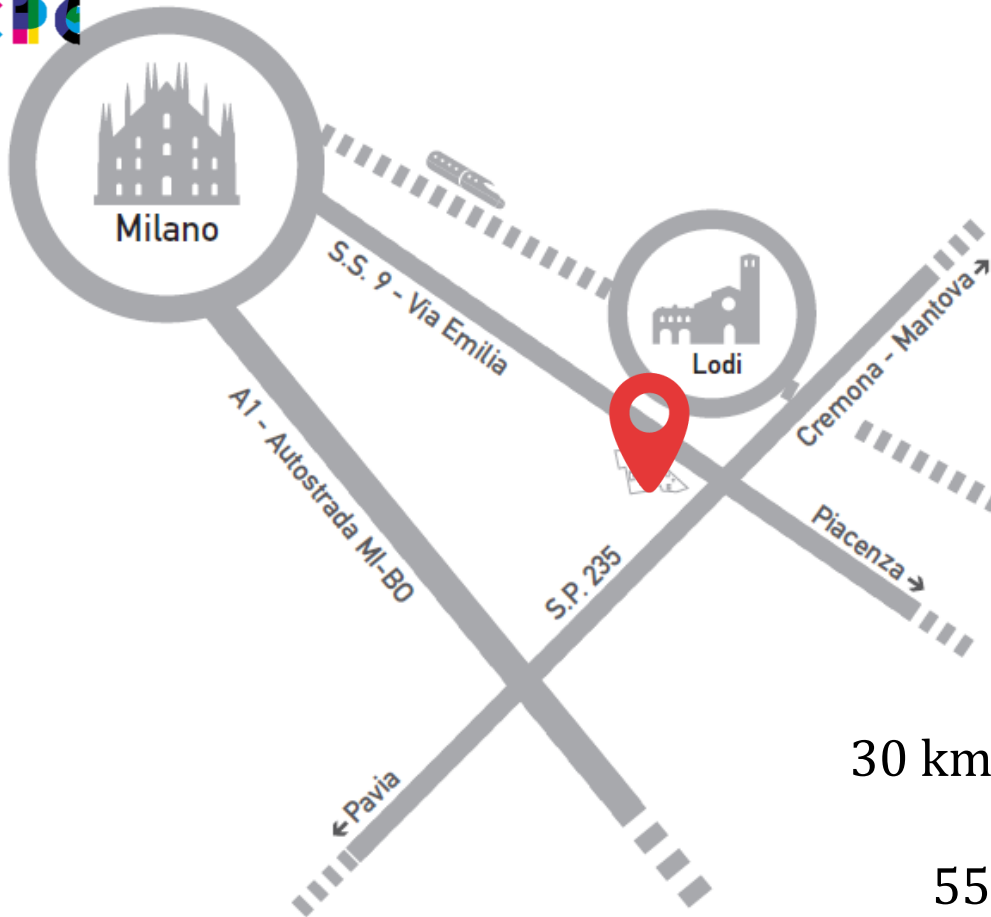
# Agriculture of Tomorrow is targeted to 4 specific audiences:



- ✓ **Institutions**  
International Participants, UN, EU,  
Lombardy and national institutions
- ✓ **Private sector**  
Farmers and professionals  
Associations and Companies
- ✓ **Academia**  
Universities and Research Centres
- ✓ **Visitors**  
Tourists, families, students

*Target*

# Agriculture of tomorrow is located within the facilities of the **Agro-Food Research Cluster of Lodi**



30 km South-East from Milan

55 km from the EXPO site

*Location*



UNIVERSITÀ  
DEGLI STUDI  
DI MILANO



Parco  
Tecnologico  
Padano

CRA  
CONSIGLIO PER LA RICERCA  
E LA SPERIMENTAZIONE  
IN AGRICOLTURA



IZS.L.E.R.



University of Milan  
Animal Research facility,  
Veterinary Hospital



University of Milan/CRA  
Fruit Experimental Station &  
Greenhouses (7 km)



Cascina Codazza  
Accommodation, Exhibition  
Spaces



PTP Science Park  
Meeting Point, Offices, Conf. Hall,  
Cooking Academy, Research Labs,  
Business Incubator



Agriculture of Tomorrow  
Demo Field for Sustainable  
Production Systems



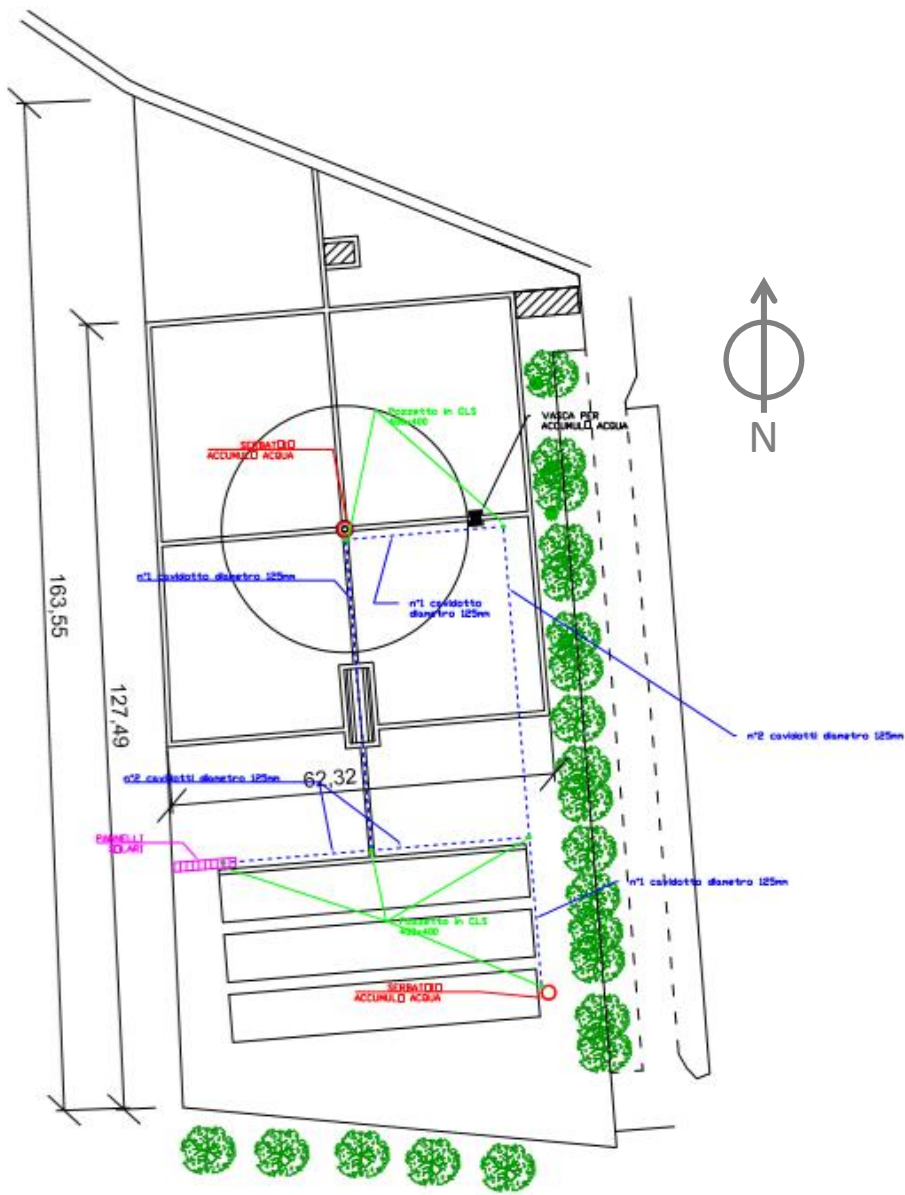
CRA (Agricultural Res. Council)  
Dairy Lab, Cattle Farm (3 km),  
Field Trials (12 km)

# The Agro-food Cluster in Lodi





# *Agriculture of Tomorrow - Topics*

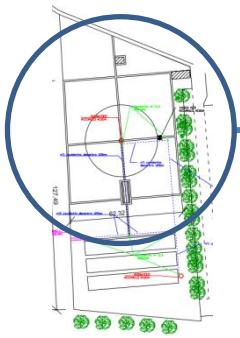


## Crops:

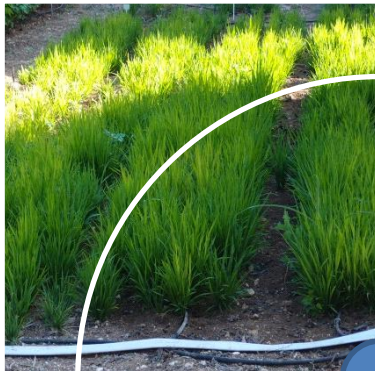
- ✓ Corn
- ✓ Sorghum
- ✓ Rice
- ✓ Soybean
- ✓ Strawberry
- ✓ Tomato
- ✓ Apple
- ✓ Vegetables

## Features:

- ✓ Plot size: 1,000 m<sup>2</sup> each
- ✓ Low pressure drip irrigation system
- ✓ Solar energy for water pumping
- ✓ Greenhouse with hydroponics



Rice



Hill



Maize

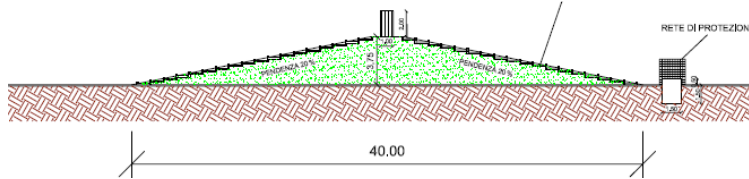
well, sensors, solar pump



Sorghum



Soybean

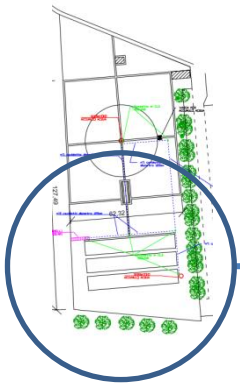


# Structure of the Demo Plots

With the Patronage of



Soybean



Tomato  
(open field)



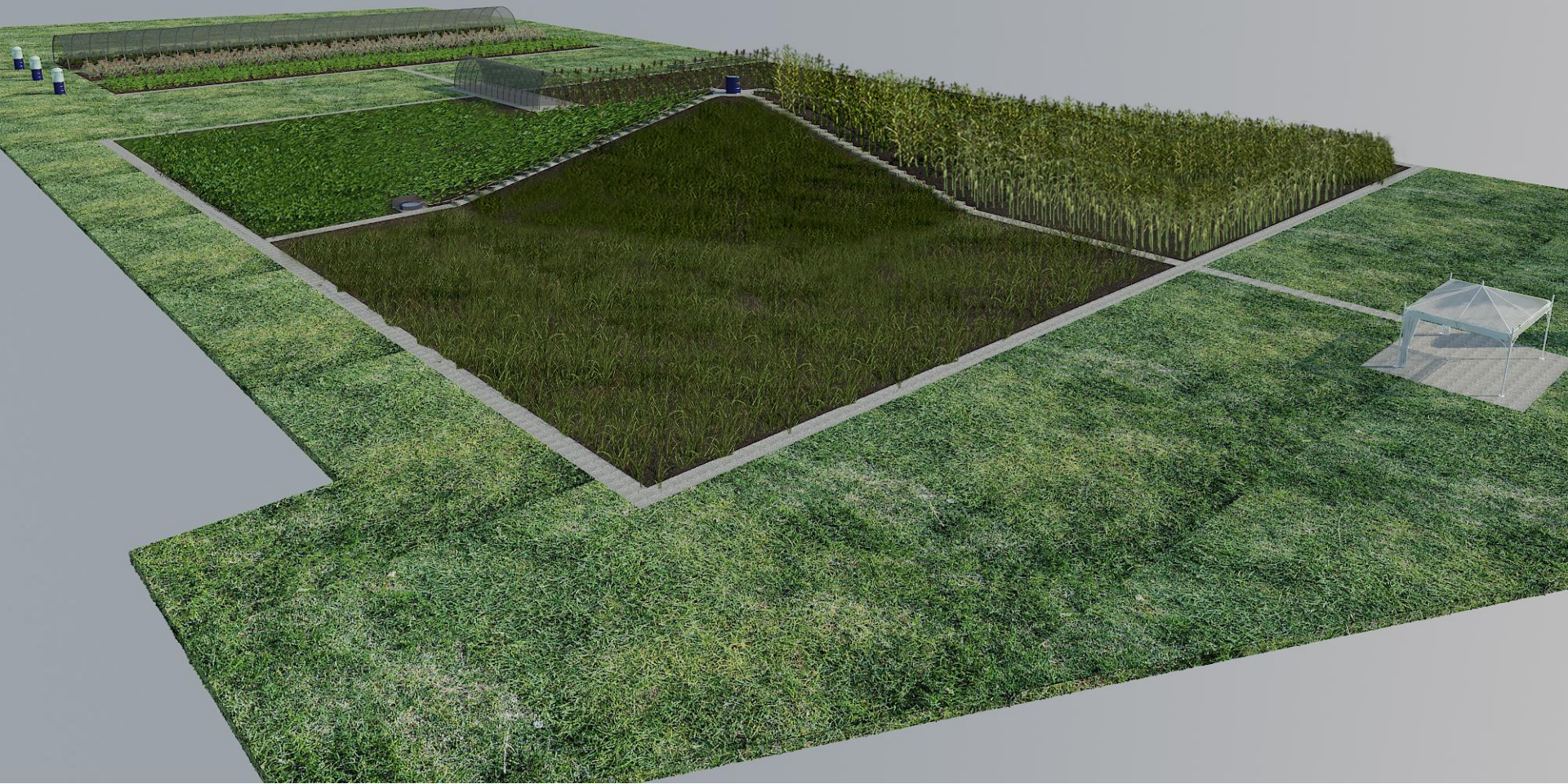
Apple  
(orchard)



Strawberry  
Tomato  
(greenhouse)



# *Structure of the Demo Plots*



# *Rendering of the Demo Plots*



		
11 - May	Smallholder agriculture in the future: grow more with less	Drip Irrigation to increase efficiency in agriculture; mechanized sowing and harvesting; marginal lands use; crop management technologies
21 - May	The drip irrigation revolution: addressing the plant needs	Localized irrigation & plant health; soil preparation (minimum tillage; organic mulching); new generation water soluble fertilizers; major trends in plant genetics; seed distribution systems in Dev. Countries
29 - May	Global trends and innovation in food supplement products	Nutraceuticals global market trends in Europe, USA, Asia; regulatory framework in Europe (EFSA); nutrigenetics and innovative technologies in food supplement production; trends in consumer attitudes
08 - Jun	Minor cereals for food security	Pseudocereals and minor cereals; nutritional values and uses; sustainable food security
11 - Jun	Sustainable Fruit Production	Orchard management; selection of the cultivars; irrigation systems and technology; plant protection; integrated pest management; precision farming
25 - Jun	Water & Agriculture in Africa and Asia: grow more with less	Smallholder agriculture solutions: how to overcome major bottlenecks of rural development; sustainable use of marginal lands for cereals and vegetable production
16 - Jul	Irrigated Rice for Food Security (part One)	Irrigated rice in paddy fields and marginal lands with no submersion: environmental, agronomic and economic issues
30 - Jul	Open field horticulture	Horticulture management; breeding; industry and market trends
03- Sept	Greenhouses technologies for horticulture	Fertigation systems; hydroponics; heating systems; automatic monitoring systems; de-humidification system; sustainable management and energy efficiency; automatic management systems
17 - Sept	Irrigated Rice for Food Security (part Two)	Irrigated rice in paddy fields and marginal lands with no submersion: environmental, agronomic and economic issues
01 - Oct	For a sustainable global soybean value chain	Seed varieties; pest controls and bio-stimulants; major trends in logistics and trade; animal feed
08 - Oct	Fruit industry in action	Innovation along the value chain; fruit genetics and breeding; processing and international trade; critical point in the fruit supply chain
15 - Oct	Smallholder agriculture in the future: grow more with less	Drip Irrigation to increase efficiency in agriculture; mechanized sowing and harvesting; marginal lands use; crop management technologies;

# Agriculture of Tomorrow - Seminar Series

May 11th 2015



Parco Tecnologico Padano - Lodi



## Smallholder agriculture in the future: grow more with less



Drip Irrigation to increase efficiency in agriculture; mechanized sowing and harvesting; marginal lands use; crop management technologies



Visit to the Demo Field (1h 30m)  
Seminar (2h)  
Lunch  
Visit to F.lli Vigo corn farm in Mediglia (MI) (2h)



English/Italian

*Agriculture of Tomorrow – Seminar 1*



May 21st 2015



Parco Tecnologico Padano - Lodi



## The drip irrigation revolution: addressing the plant needs



Localized irrigation & plant health; soil preparation (minimum tillage; organic mulching); new generation water soluble fertilizers; major trends in plant genetics; seed distribution systems in Developing Countries



Visit to the Demo Field (45 m)  
Seminar (3h)  
Lunch  
visit to F.lli Vigo corn farm in Mediglia (MI) (2h)



English/Italian

*Agriculture of Tomorrow – Seminar 2*

May 29th 2015



Parco Tecnologico Padano - Lodi



## Global trends and innovation in food supplement products



Nutraceuticals global market trends in Europe, USA, Asia; regulatory framework in Europe (EFSA); nutri-genetics and innovative technologies in food supplement production; trends in consumer attitudes



Seminar (10.30 - 13.00)

Lunch

B2B session – visit to the PTP Research & Innovation Centre



English/Italian

*Agriculture of Tomorrow – Seminar 3*

June 11th 2015



Parco Tecnologico Padano - Lodi



## Minor cereals for food security



Pseudocereals and minor cereals; nutritional values and uses; sustainable food security



Visit to the Demo Field (45 m.)

Seminar (3h)

Lunch

visit to Bread Museum at Castle of Sant'Angelo Lodigiano (Lodi) and Cereals Field Trials (CRA) – 2 h



English/Italian

*Agriculture of Tomorrow – Seminar 4*

June 11th 2015



Parco Tecnologico Padano - Lodi



## Sustainable Fruit Production



Orchard management; selection of the cultivars; irrigation systems and technology; plant protection; integrated pest management; precision farming



Visit to the Demo Field (45 m.)

Seminar (3h)

Lunch

Visit to the Fruits Experimental Station of Univ. Milan at Arcagna (Lodi) (2 h)



English/Italian

*Agriculture of Tomorrow – Seminar 5*

June 25th 2015



Parco Tecnologico Padano - Lodi



## Water & Agriculture in Africa and Asia: grow more with less



Smallholder agriculture solutions: how to overcome major bottlenecks of rural development; sustainable use of marginal lands for cereals and vegetable production



Visit to the Demo Field (45 m.)

Seminar (3h)

Lunch

Bilateral Meetings with Delegations of selected African/Asian Countries



English/Italian

*Agriculture of Tomorrow – Seminar 6*

July 16th 2015



Parco Tecnologico Padano - Lodi



## Irrigated Rice for Food Security (part One)



Irrigated rice in paddy fields and marginal lands with no submersion:  
environmental, agronomic and economic issues



Visit to the Demo Field (45 m.)  
Seminar (3h)  
Lunch  
Visit to Rice Experimental Station in Lombardy



English/Italian

*Agriculture of Tomorrow – Seminar 7*

July 30th 2015



Parco Tecnologico Padano - Lodi



## Open field horticulture



Horticulture management; breeding; industry and market trends



Visit to the Demo Field (45 m.)

Seminar (3h)

Lunch

Visit to Experimental Station for Horticulture - CRA (Montanaso - Lodi) or visit to SOLANA (Maccastorna, Lodi) Tomato Processing Industrial Plant (2h)



English/Italian

*Agriculture of Tomorrow – Seminar 8*

September 3rd 2015



Parco Tecnologico Padano - Lodi



## Greenhouses technologies for horticulture



Fertigation systems; hydroponics; heating systems; automatic monitoring systems; de-humidification system; sustainable management and energy efficiency; automatic management systems



Visit to the Demo Field (45 m.)

Seminar (3h)

Lunch

Visit to Greenhouse Technologies Demo Farm (Mantova)



English/Italian

*Agriculture of Tomorrow – Seminar 9*



September 17th 2015



Parco Tecnologico Padano - Lodi



## Irrigated Rice for Food Security (part Two)



Irrigated rice in paddy fields and marginal lands : environmental, agronomic and economic issues



Visit to the Demo Field (45 m.)

Seminar (3h)

Lunch

Visit to Rice Experimental Station in Lombardy



English/Italian

*Agriculture of Tomorrow – Seminar 10*

October 1st 2015



Parco Tecnologico Padano - Lodi



## For a sustainable global soybean value chain



Seed varieties; pest control and bio-stimulants; major trends in logistics and trade; human nutrition and animal feed



Visit to the Demo Field (45 m.)

Seminar (3h)

Lunch

Visit to Soybean Experimental Station in Lombardy



English/Italian

*Agriculture of Tomorrow – Seminar 11*

October 8th 2015



Parco Tecnologico Padano - Lodi



## Fruit industry in action



Innovation along the value chain; fruit genetics and breeding; processing and international trade; critical point in the fruit supply chain



Visit to the Demo Field (45 min.)

Seminar (3h)

Lunch

Visit to the Fruits Experimental Station of Univ. Milan at Arcagna (LO) (2 h)



English/Italian

*Agriculture of Tomorrow – Seminar 12*

October 15th 2015



Parco Tecnologico Padano - Lodi



## Smallholder agriculture in the future: grow more with less



Drip Irrigation to increase efficiency in agriculture; mechanized sowing and harvesting; marginal lands use; crop management technologies;



Visit to the Demo Field (45m)  
Seminar (3h)  
Lunch  
Networking & Matchmaking



English/Italian

*Agriculture of Tomorrow – Seminar 13*

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