



Barbara La Licata

The twin transition in agri-food: challenges and opportunities

23 september 2022

AURORAL PROJECT -SUSTAINABILITY AND DIGITALIZATION FOR THE AGRI-FOOD SECTOR

Environment Park is a **Technology Park** that has been active for over 20 years in the fields of environmental innovation and sustainability.

We are a **competence center** working with public administrations and companies.

We take part in **networks and projects** on a national and European level.

Our business develops in **two main areas**:

█ **TECHNOLOGY PARK**

█ **INNOVATION SERVICES**



# INNOVATION SERVICES

Where **sustainability**  
matches *customised*  
solutions.



## SERVIZI PER L'INNOVAZIONE

We have been doing **eco-innovation** for over 20 years.

We are a **competence centre** offering **innovative labs and services** to private companies and public administrations.

We design **tailor-made services and solutions** for and with our partners and customers.

We develop specialist services for **technology transfer**.

We manage **projects** throughout their **life cycle**.

**+600**

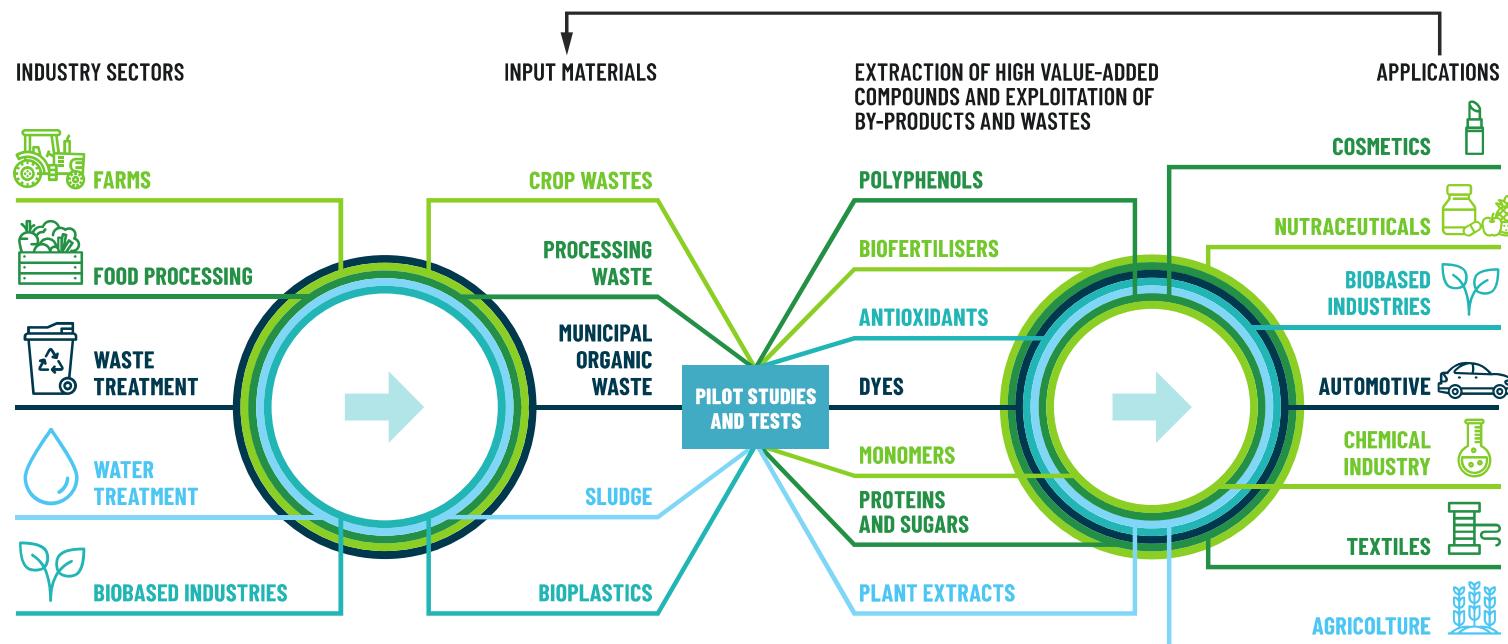
CONSULTANCY CONTRACTS AND  
PROJECTS since 2010, 100 of which  
FINANCED by EUROPEAN  
PROGRAMMES

**+1000**

R&D contracts since 2000

# Green Chemistry and Circular Economy

We develop, through pilot scale plant tests, processes for identifying the potential of a by-product and for turning it into value.



## BIOMASS PRE-TREATMENT PLANTS

## Facilities and technologies



PHOTOBIOREACTOR

CHEMICAL AND  
ENZYMATIC HYDROLYSIS

STEAM EXPLOSION

Valorization of innovative bioeconomical potential  
along biobased food and botanical extract value  
chain in the Alpine Space

Apple juice  
byproducts

Apple flour



Cosmetics

**POMACE: bio-molecules extraction from tomato industry wastes for nutraceutical and biostimulants application P.O.R. Fesr 2014/2020 co-founding**

- Extraction and purification of antioxidants biomolecules from tomatoes processing industries wastes through innovative process with no solvents application
- Development of nutraceutical foods added with the extracted biomolecules .

Tomatoes  
peelsApple juice  
byproducts

**PRECIOUS – Polyphenols for cosmetics and nutraceutical products  
Regional Project- 2018-2020**

Italian Wine  
pomaceRed wine  
pomace (organic  
and not)  
extraction  
steam explosion  
processPurification  
process (micro-  
ultrafiltration  
membranes)Formulation and  
realization of a line of  
cosmetic products  
Shower gel  
Face cream  
TonicFormulation and  
realization of a  
food additive –  
cacao powder  
with  
antioxidants

SERVIZI PER L'INNOVAZIONE

**CLEVER Cluster**



### Cluster Managers



**Environment Park**  
Torino (Italy)



**Consorzio Uni.Ver**  
Vercelli (Italy)



**Eco-innovating Piedmont  
is our mission.**

More than  
**170** members



**22** large enterprises



**141** SMEs

**8** Research institutions

### Activity areas

**Energy**

**Sustainable mobility**

**Circular economy**

**Climate change**

**Water**

**Clean solutions**



This project has received funding from  
the European Union's Horizon 2020  
research and Innovation programme  
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# AURORAL

ARCHITECTURE FOR UNIFIED REGIONAL AND OPEN  
DIGITAL ECOSYSTEMS FOR SMART COMMUNITIES AND RURAL AREAS  
LARGE SCALE APPLICATION

TOPIC: DT-ICT-09-2020 - INNOVATION ACTION  
BOOST RURAL ECONOMIES THROUGH CROSS-SECTOR DIGITAL SERVICE  
PLATFORMS



Research and Development Project, financed by the European H2020 Program

## 25 partners

- 8 Pilot Regions: Spain, Italy, Portugal, Norway (2 different regions), Finland, Austria, Sweden



Main objectives of the project:

- Increasing the connectivity of rural areas → Development of digital platforms
- Reducing the digital divide between cities and rural areas;
- Fostering economic growth, including job opportunities in rural areas;

## DIGITALIZATION OF RURAL AREAS



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ENVIRONMENT PARK Parco Scienze, Tecnologie, Ambiente

## AURORAL PARTNERS



EUROPAISCHES ZENTRUM  
FÜR ERNEUERBARE ENERGIE  
GÜSSING GMBH



UNIVERSIDAD  
POLITÉCNICA  
DE MADRID

# WHAT IS A DIGITAL PLATFORM?



AURORAL

- ✓ Is an internet and web-based virtual space, based on some unique business models to exchange information, knowledge, goods, ideas, or services, etc, either with financial or nonfinancial returns
  - google search engine;
  - apple store;
  - amazon market place
- ✓ Is a technological artifacts that centralize and decentralize actions promoting connections, interactions, between users and providers of products and services through features, tools, and algorithms
- ✓ It could be a website, a social media page, a mobile app, a digital wearable, a digital game, and artificial intelligent object

Digital platforms are a way to develop information technology infrastructure, including social media, mobile computing, and e-commerce platforms.

***They help companies break down barriers to creating smoother processes through digital technology***



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# APPROACH

## CO-DEVELOPMENT & INTEROPERABILITY

AURORAL intends to develop **digital platforms** that are:

- open;
- interoperable;
- integrated and integrable with other digital platforms

The digital platforms developed will serve **Rural Areas** and contribute to the development of a European ecosystem of digital services to strengthen **Smart Communities**



## DEVELOPMENT OF A DIGITAL ECOSYSTEM

AURORAL intends to create a network of smart communities through the implementation of PILOT-SITES in rural areas.

The activities developed in the Pilot Sites can be implemented across Europe by developing an investment platform of innovative services for rural areas and smart communities



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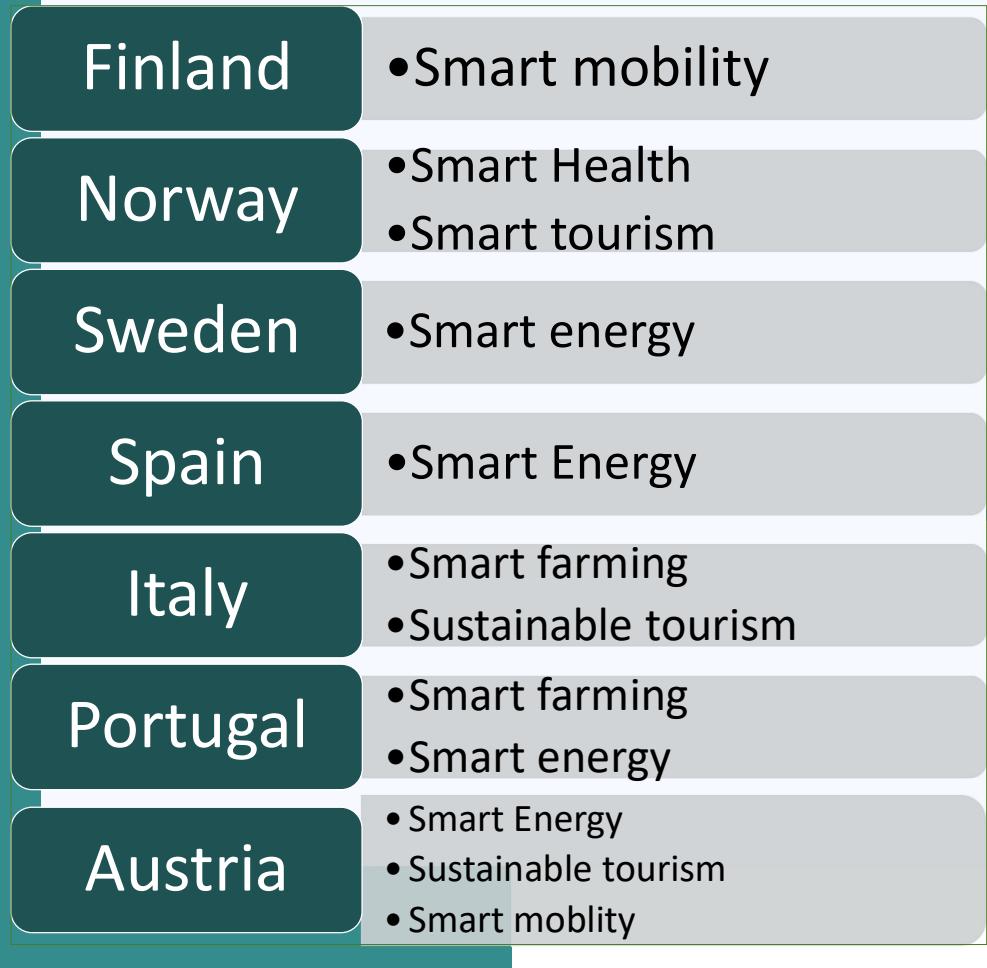


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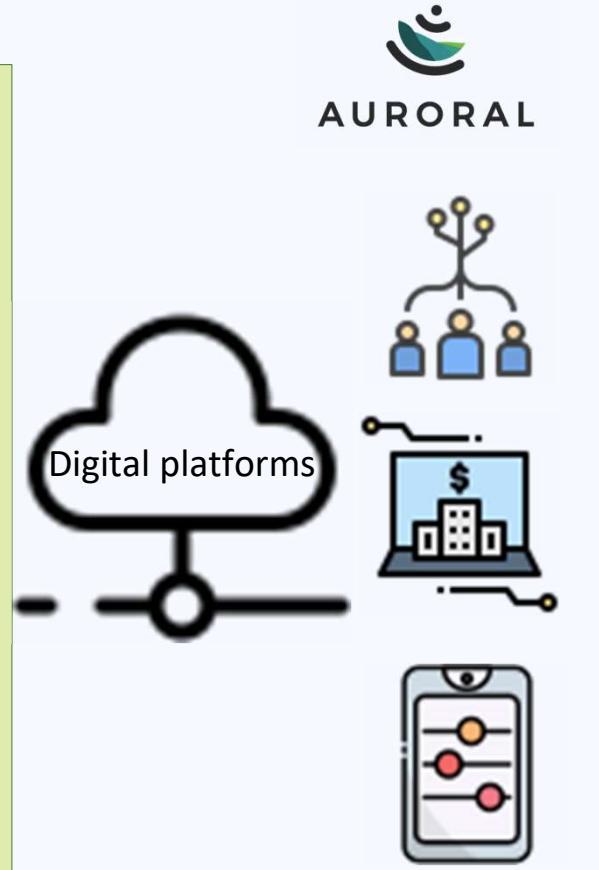


## HOW DOES AURORAL WORKS?

8 PILOTS



AURORAL MIDDLEWARE



# PIEDMONT PILOT REGION

Precision dairy farming and social eco-tourism in rural area of Piedmont (Italy)

## WHAT IS THIS PILOT ABOUT?

The pilot area is in the Piedmont region in a rural area near Cuneo, the third largest province of Italy, typical for agricultural production and for farming. The Pilot Site is represented by a small-size farmers social cooperative "I Tesori della Terra" that has an organic dairy (cheese and yogurt), an innovative breeding farm (eco-barn) and organizes social farming activities.

AURORAL will support Piedmont Pilot Site to restore, preserve and enhance agriculture ecosystems as well as on improving the competitiveness of farming. Digitization of agriculture, farming and rural areas will help harness the potential to increase farm efficiency while improving the economic and environmental sustainability of the agricultural sector.

## HOW WILL IT BE CARRIED OUT?

The on-site implementation plan consists of:



Control and management  
of the dairy production



Precision livestock  
farming



Sustainable tourism  
and social  
agriculture

HIGH LEVEL OF REPLICABILITY OF THE INTERVENTIONS TO FOSTER THE DEVELOPMENT  
OF AGROINDUSTRIES, FARMING AND SUSTAINABLE TOURISM



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## PILOT SITE – TESORI DELLA TERRA

small-size farmers social cooperative

- ✓ Dairy organic farm with production of cheese and yogurt;
- ✓ Social farming (social inclusion of person with handicaps and disadvantaged people)
- ✓ Innovative barn for cows with a compost litter that increases animal welfare



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## AREA OF INTERVENTION

DAIRY FARM: Precision dairy farming → Digitalization of the dairy factory (precision system plant, RFID tags for products, energy and water control and management system);



INNOVATIVE BARN: Precision Livestock Farming → realization of an integrated system with sensors data in real time for the daily management of the cows and the housing system (i.e cows collars for health monitoring, weather data collection, etc.)



ECO-TOURISM: social tourism (school and family visits) organized by people with social disadvantages



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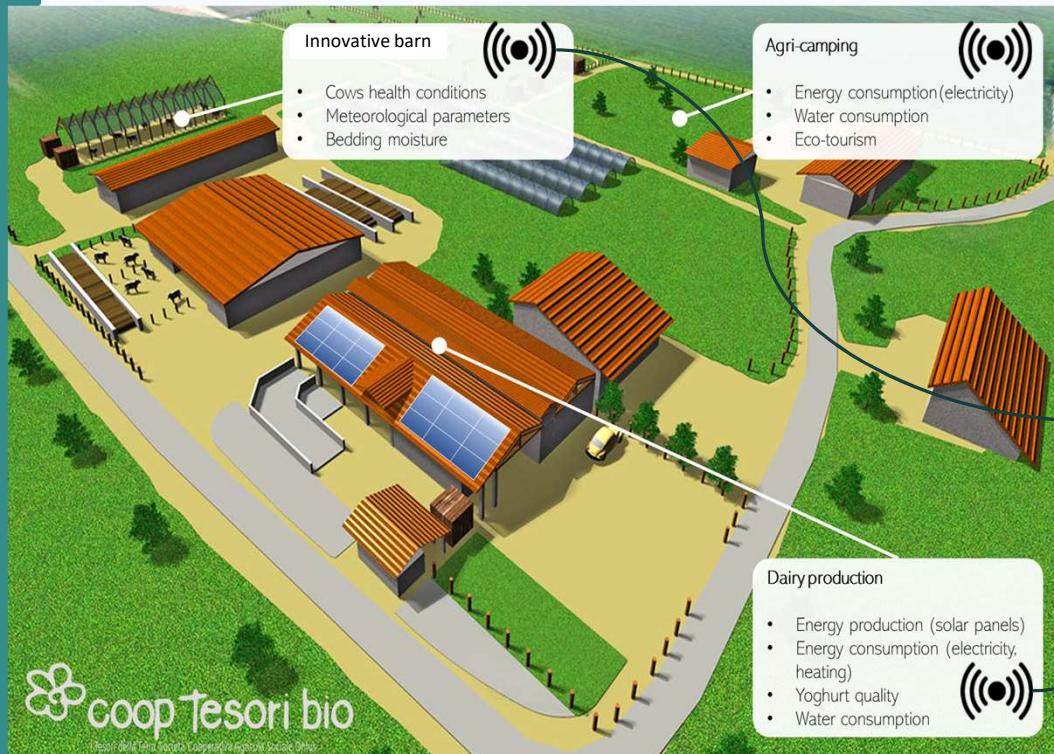


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# SYSTEM ARCHITECTURE



## AURORAL DIGITAL PLATFORM



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## EXPECTED ITALIAN PILOT BENEFITS

- ❖ Reduction of energy and water consumption;
- ❖ Improvement of daily management of cows;
- ❖ Increase animal welfare ( animal productivity, health, milk quality, reproduction, and well-being;
- ❖ Increase farm profitability mproving economic and environmental sustainability of the agricultural sector based on digitalized commodities for product and service exchange
- ❖ stimulate vulnerable people's independence and personal development based on active collaboration and help on the farm activities





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# THANK YOU!

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