



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.**



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

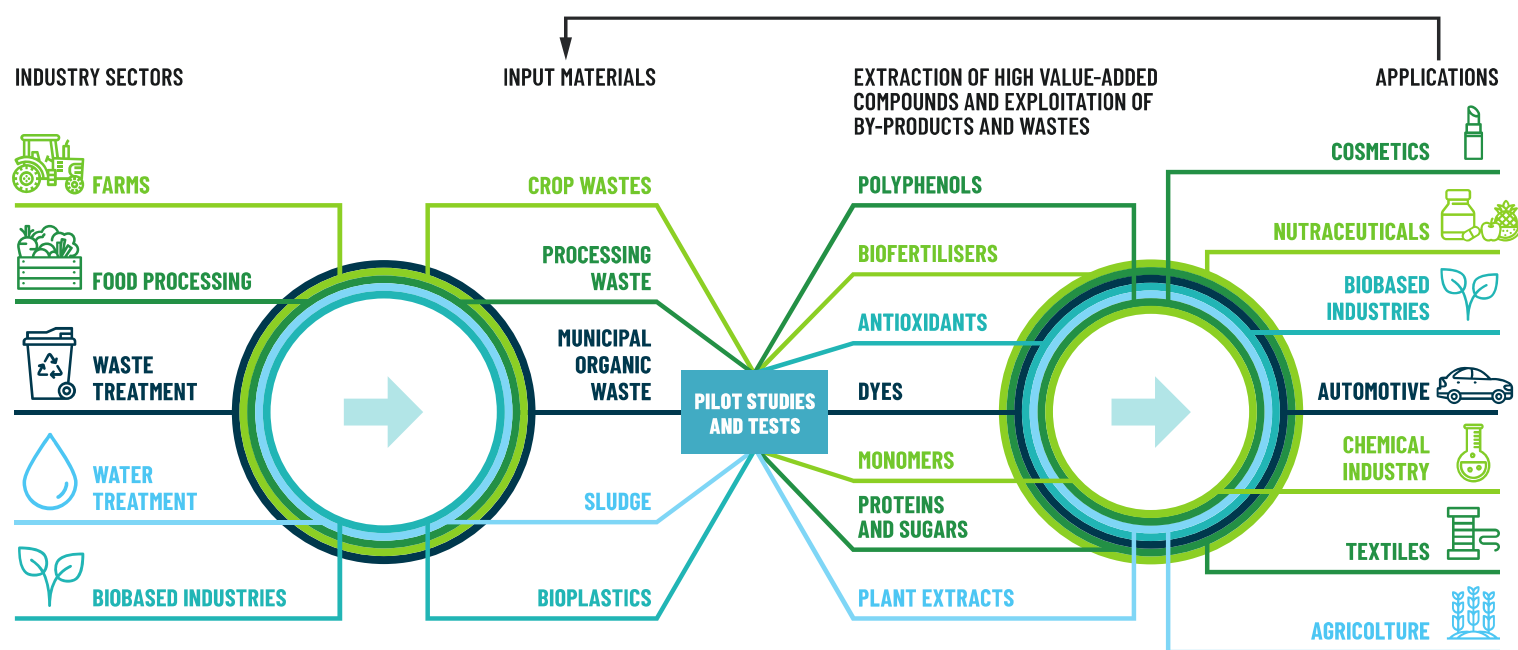
CONSULTANCY CONTRACTS AND
PROJECTS since 2010, 100 of which
FINANCED by EUROPEAN
PROGRAMMES

+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-funding

- 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
peels



Apple juice
byproducts



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



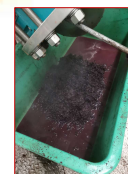
Italian Wine
pomace

Red wine
pomace (organic
and not)
extraction
steam explosion
process

Purification
process (micro-
ultrafiltration
membranes)

Formulation and
realization of a line of
cosmetic products
Shower gel
Face cream
Tonic

Formulation and
realization of a
food additive –
cacao powder
with
antioxidants



SERVIZI PER L'INNOVAZIONE

CLEVER Cluster  CLEANTECH & ENERGY INNOVATION 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 under grant agreement N° 101016854.



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

AURORAL PARTNERS





AURORAL

WHAT IS A DIGITAL PLATFORM?

- ✓ 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

HOW DOES AURORAL WORKS?

8 PILOTS

Finland

- Smart mobility

Norway

- Smart Health
- Smart tourism

Sweden

- Smart energy

Spain

- Smart Energy

Italy

- Smart farming
- Sustainable tourism

Portugal

- Smart farming
- Smart energy

Austria

- Smart Energy
- Sustainable tourism
- Smart mobility

AURORAL MIDDLEWARE

Digital platforms



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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 **coop tesori bio**
100% prodotti biologici e a km 0

 **ENVIRONMENT
PARK**
Parco Scientifico
Tecnologico e Ambientale

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)
- ✓ Innovative barn for cows with a compost litter that increases animal welfare



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);



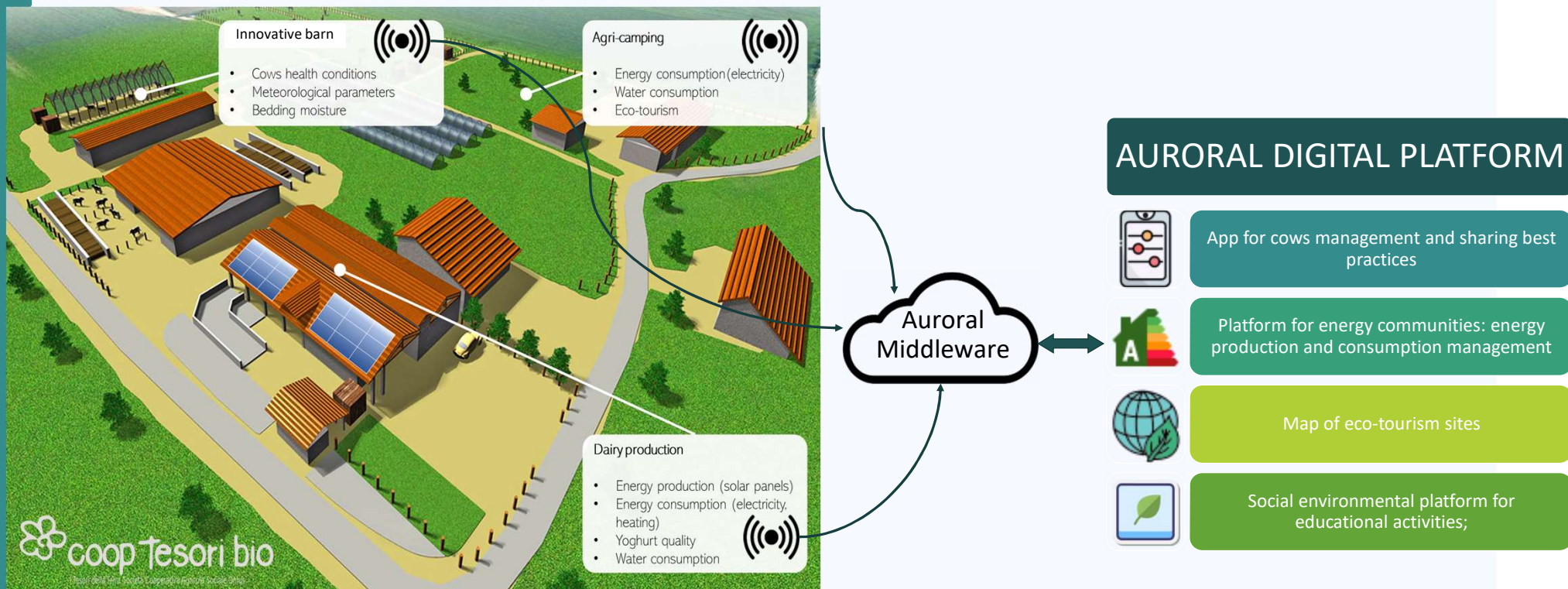
INNOVATIVE BARN: Precision Livestock Farming → realization of an integrated system with sensors data in real time for the daily management of the cows and the housing system (i.e cows collars for health monitoring, weather data collection, etc.)



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



SYSTEM ARCHITECTURE



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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