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REPLACE LOCAL ANALYSIS

Lazio Region



REGIONE
LAZIO

Lazio Region was the coordinator of the Horizon 2020 SCREEN project (www.screen-lab.eu) that paved the way for the cross-regional cooperation Interreg Europe REPLACE project (www.interregeurope.eu/replace): in fact, the latter capitalizes on the outputs and the experiences of SCREEN.

The present Local Analysis report builds up and updates the work previously done employing SCREEN methodology and tools, using the same structure to display information regarding the following four important areas of interest for the transition toward a circular economy from a regional perspective:

1. RIS 3 Strategic Areas and SWOT Analysis
2. Focus Sectors - Companies
3. Capabilities view – R&D - Education
4. Emerging Ideas

S3 and focus sector

Lazio region indicates six areas of specialisation for the RIS3 Regional Smart Specialization Strategy,

(https://s3platform.jrc.ec.europa.eu/map?p_p_id=captargmap_WAR_CapTargMapportlet&p_p_lifecycle=0&p_p_state=normal&p_p_mode=view&p_p_col_id=column-1&p_p_col_count=1)

with specific sub-categories describing the field of application of circular economy related activities:

- **Aerospace and security:**
 - Space: technologies for land observation;
 - Aeronautics: ecological production, new and clear engines, efficient air transport operations;
 - Security: climate change applications, and disaster resilience as a consequence of the ongoing climate change process;

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- **Life sciences:**
 - Pharmaceutical: biomaterials, nutrition and nutraceuticals;
 - Medical devices: advances sensors and biosensors for diagnostic;
- **Cultural heritage and related technologies:** models for dispersion of air pollutants and deposition patterns of pollutants;
 - Digital creative industries: technologies for smart green and integrated transport, product design for the use of innovation materials or reuse;
- **Agri-food:** sustainable agriculture and natural resources management and use, food health and safety, sustainable and competitive bio-based industries;
- **Green economy:**
 - Green and smart building: construction, heating and cooling, decarbonisation;
 - Renewable energy and smart grids: enhanced storage technologies, modernised grid technologies, electricity from renewable sources for heating and cooling;
 - Ecosystem services and regulation: integrated approaches for security, low-carbon energy, sustainable water management;
 - Efficient use of resources, treatment and processing of waste: sustainable use of agricultural waste, co-products and by-products, eco-innovative processes for waste reuse;
 - Industrial symbiosis: systemic approach for reduction, recycling, and reuse of food waste.

Lazio is one of the most developed region in Italy and its RIS3 includes different sectors, showcasing the opportunities for cross-industrial and inter-sectorial development with possibilities to transfer and apply both technologies and capabilities across industries and fields.

The **airspace and security** is an innovation-and-research-intensive sector characterised by the presence of large companies cooperating with big international groups, particularly active on technology innovation.

The **life science** area of specialisation is a complex domain characterised by high-added-value businesses endowed with strong innovation potentials. The life science sector is composed of different but synergic industries, such as: chemical, zoo-technics, pharmaceuticals, agri-food, and environmental sciences.

This field represents an area of excellence in Lazio, especially the pharmaceutical industry.

The specialisation of **cultural heritage** is particularly significant in Lazio region since it hosts an important technological cluster, created in 2008 with the objective of strengthening the competitiveness and the innovation capabilities to enable the generation of growth and economic development in the heritage-rich region. The sector encompasses also the cultural, creative and digital industries, including ICT and audio-visual.





The **agri-food** area of specialization of Lazio region shows a highly differentiated landscape: there are supply chains of national and international relevance (such as nuts and kiwi production), important agricultural productions of different types of vegetables, as well as the cultivation of flowers. This field plays a significant role in the regional production and shows positive trends both in the level of specialisation achieved and in the quantities produced.

From the preliminary analysis of the areas endowed with the highest innovation capabilities, Lazio region identifies **three main focus sectors of interest for the transition toward a circular economy**:

- ① **Manufacturing**: crossing the domains of pharmaceuticals, food and agri-food and transport equipment
- ② **Creative and Digital Industries**
- ③ **Cultural heritage and cultural-related technologies**

Lazio region possesses several assets for the transition and the development of a circular economy as the levels of public spending and investments in R&D remains high.

The territory can exploit the capabilities, knowledge and skills available within the high-tech companies active in the region, it can benefit from the well-established research infrastructures as well as from the numerous technological providers.

Lazio foresees both large potentials and major gains from the circular economy transition, resulting in an increased economic and human development that enhances the sustainability of the industry and of the society, while generating growth in the agri-food, manufacturing, construction and advanced services industries.

On the other hand, **Lazio region needs to attentively contrast the negative tendencies that might compromise and hamper the potential achievement of benefits deriving from the transition toward a circular economy**: the process of application of the present Local Analysis tool has helped in the identification of unfavourable factors. For instance, a progressive decline of private investments, as well as a negative trend of excessive fragmentation of public resources have been registered, with the need for the definition of corrective measures. Another hypothetical barrier can arise from the insufficient level of cooperation among private companies and with the public research institutions, notably in the field of green technologies. The lack of consciousness and sensibility about the circular economy and its advantageous impacts among the civil society has been also observed, highlighting the necessity for awareness-raising and dissemination actions.





Regional capabilities and prospected innovation

Lazio region has significant capabilities to exploit for fostering the transition toward a circular economy. The **companies** identified and listed within the present Local Analysis cover all the positions in the circular value chain, with main focuses on Use/Service and Production. Unfortunately, some of the application domains of the circular economy activities are currently missing: although maintenance, refurbish, and repair activities are lacking, **the state of the art of circular economy in Lazio region demonstrates the focus on closing the loops on biochemical feedstock recovery and on recycling** (closed loop).

The assessment showcases how diverse companies are able to offer different enabling technologies in the crucial fields of design, production and testing, as well as noteworthy capabilities in the research and innovation of both products and processes. The firms are able to provide processing capacities for the secondary-raw-materials (specifically on hydrometallurgical processes, cardboard packaging, and ceramic production), as well as IT solutions to support the recycling and the monitoring of natural resources.

Lazio region reports also key **Research and Development abilities**, with projects aiming at implementing and applying sustainability in numerous areas.

The use of bio-materials for the production of polymers, bio-polymers, and bio-fuels is being investigated in different projects. Other projects are instead focusing on waste processing, reuse of wastewater, energy savings, and renewable energy exploitation.

The most important R&D capabilities are expressed by three main universities and the inter-university consortia, as well as the research centre.

Noteworthy research areas are in the domains of: bio-chemistry, green and industrial chemistry, pharmaceutical industry, cosmeceutical industry, green energy, sustainability and environmental management, physics, earth science and industry 4.0.

The **education capabilities** cover all the three levels of the tertiary education, namely bachelor, master and doctoral (PhD) degrees.

Eight different universities offer training paths in the domains of: agri-food, agronomy and forestry, biology, chemistry, engineering, management, and sustainability.

The **innovation potential** in the region is best described by eight emerging ideas targeting waste management, waste water management, energy, pharmaceuticals, and specialised construction industry.





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The above-mentioned prospects focus on recycling and reuse of polymers, rubber and plastics, with the aims of reducing the impact of urban waste, finding energy-creation opportunities, improving energy-saving or energy-efficiency of specific production processes.

Among the **emerging ideas**, the region reports innovation potentials in: reuse of exhausted car tyres, water treatment, biomass production and recycling of agri-food waste.

In general, **Lazio region reports difficulties at the regulation level**: the coordination among the different regulatory bodies in charge of policy-making dealing with circular economy needs to be improved.

In the matters of its competence, Lazio is directly committed in promoting circular and green public procurement and it complements the EU funding, following the additionality criterion

Stakeholder engagement

Stakeholders have been continuously involved, employing the bottom-up and participatory approach developed within the SCREEN project.

Regarding REPLACE project, stakeholder engagement have been implemented, taking into account all the limitations deriving from the current COVID-19 pandemic, the project has been officially presented and promoted to the stakeholders during the Regional Focus Group on the circular economy in August 2020 (online event). Unfortunately, a dissemination event was planned in Rome for March 2020, but it was cancelled due to the risks associated with the virus.

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