

SYMBI | Industrial Symbiosis for Regional Sustainable Growth and a Resource Efficient Circular Economy: 1st Semester of the Project Implementation

The pandemic has caused major disruptions in SYMBI partners' efforts to transition towards a circular economy model, and has exacerbated the ineffectiveness of linear territorial economic models in times of crisis, raising concerns for recovery and future resilience. Considering that industrial waste, energy demand and CO2 emissions skyrocket after major crises, there is a pressing need to resume and further advance the circular transformation in the 7 participating SYMBI territories, in light of policy gaps uncovered by COVID-19.

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SYMBI aims to support the transition towards a resourceefficient economy through the establishment of territorial synergies to manage waste and exchange energy and byproducts as secondary raw resources.

The 5th call activities aim to further extend this effort, while studying the impact of the COVID-19 pandemic. Extension's activities focus on how the partners can improve and urge the circular transformation in the situation created by the pandemic.

During the 1st semester, partners discussed the COVID-19 impact on industrial symbiosis (IS), the challenges and new IS opportunities. Partners conducted online meetings with regional stakeholders on territorial needs and they ensued workshops, presenting IS digitalisation good practices and measures to be transferred in own territories.

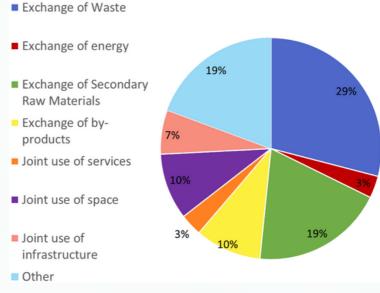
Joint Study

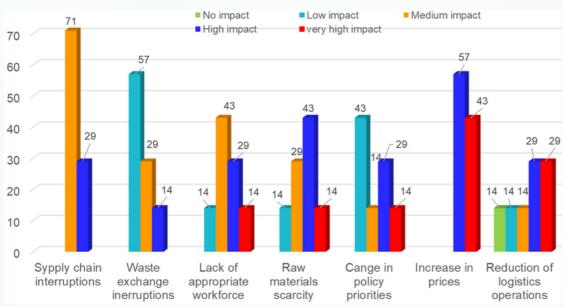
Scope:

- Identify COVID-19 impact on industrial symbiosis practices in the SYMBI regions and how industrial symbiosis practices assisted economic recovery and resilience of regional economies to external events.
- Identify good/best industrial symbiosis practices during the pandemic, which could serve as examples and aid future policy making.
- Make policy suggestions on how regional authorities can support industrial symbiosis practices and utilize them to promote economic recovery and resilience.

The pie chart, shows that the exchange of waste and secondary raw materials were identified as best IS practices, as a response to the COVID-19 crisis.

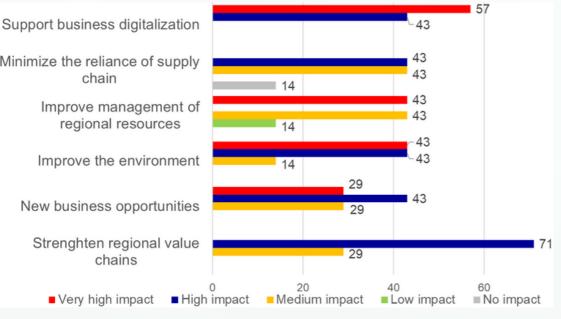
"JOINT STUDY ON COVID-19 IMPACT, CHALLENGES AND NEW INDUSTRIAL SYMBIOSIS OPPORTUNITIES" SUMMARY REPORT | APRIL 2022





The COVID-19 pandemic has created many challenges for businesses, including materials' price inflation and supply chain disruption.

Strengthening the regional value chains to make regional economies more resistant to future crises is the most decisive factor, together with supporting the digital transformation in regional value chains.



Main Conclusions:

- The sector most affected by COVID-19 crisis was tourism.
- The impact of the pandemic was not severe on IS plans and activities.
- The waste management circular activities were highly challenged by the increased volume of the waste generated (especially packaging and unsorted waste).
- The recovery and resilience of regional economy and businesses was enhanced by Industrial Symbiosis and circular economy practices, along with the innovation of the related businesses.
- Policy authorities should encourage such practices and contribute to the expansion of regional businesses networks and innovation pathways.

Regional Stakeholders Meetings



REGIONAL STAKEHOLDERS MEETING ON 26.04.2022, IN EXTREMADURA, SPAIN

FUNDECYT, held the 1st regional stakeholders meeting on 26th of April. All stakeholders and representatives of the socio-economic, educational, scientific and public administration sectors of Extremadura, discussed the problems that companies are currently facing, after Covid, related to transport logistics and inflation, and how to strengthen the transition to the Circular Economy through digital tools that promote Industrial Symbiosis in the productive and business fabric of the region. Workflow adaptation, new markets, reducing cuts and exploring new resources, and new trade channels and exchange of materials, are some of the mitigation techniques being used.

Other issues raised were related to the culture of rehabilitation in construction and materials in general, and the current difficulty of matching in the service sector. Finally, several participants expressed the importance of the practice of industrial symbiosis thanks to the multitude of possibilities that by-products can have, and how they can be given added value to find new uses.

"CIRCULAR ECONOMY AND INDUSTRIAL SYMBIOSIS AFTER COVID-19: CURRENT SCENARIO AND FUTURE COLLABORATIONS" ONLINE STAKEHOLDERS MEETING ON 12.05.2022, HELD BY COC MOLISE

The aim of the Molise regional stakeholders meeting on 12th of May 2022, was to illustrate the results of the activities carried out to investigate the impact of the pandemic on Industrial Symbiosis (IS) and to discuss possible collaborations to improve Circular Economy. The attendees were representatives of Molise Region, University of Molise, Environmental Associations and regional Bodies and regional trade Associations, and discussed about the need to create regional laws that promote the adoption of the Circular Economy, together with the creation of funds and incentives that support and reward companies that already apply good practices.

The reuse of waste and byproducts would represent a valid help in safeguarding the planet and an economic advantage.



The importance of communication and coordination between companies and authorities was underlined, to reduce delays in the approval of legislative acts and in economic activity.

The fundamental role of communication and awareness raising activities was highlighted. Information campaigns on recycling and the dangers of exploiting the Earth's resources would provide citizens with a more aware education on environmental matters, especially for the youngest who represent the future of the Planet.

A Memorandum of Understanding was also presented in response to COVID-19, with primary purpose to foster synergies which can support, promote and strengthen the principles of the circular economy, and to foster a dialogue between the business world and local administrations and bodies. Two cases have been identified; the RES NETWORK and the CENTRALE DEL LATTE DEL MOLISE, in which, companies have formed a network to recover jointly resources for reuse (waste, energy, by-products) by sharing profitable buys. In addition, two digital platforms SYMBIOSIS PLATFORM and SFRIDOO, were presented, which bring together the companies interested in the IS, to facilitate and improve the exchange of by-products.

Upcoming Project & Thematic Events

SYMBI "CIRCULAR ECONOMY GOOD PRACTICES AND FUNDING WORKSHOP"|ONLINE, 8TH JUNE 2022

SYMBI Workshop on Circular economy good practices and funding will be hosted online by the Finnish SYMBI partners Häme University of Applied Sciences and Regional council of Häme on 8th June, 2022. The workshop will focus on different good practices and funding instruments among circular economy and industrial symbiosis of partner countries and regions, and will be built around the thematic areas of EU Green Deal and Circular economy Action Plan. Good practices from SYMBI partner countries and regions will be presented during the workshop.

DEEP DEMONSTRATIVE OF A CIRCULAR, REGENERATIVE AND LOW-CARB ECONOMY PROJECT | SLOVENIA, 2023

The Deep Demonstration of a Circular, Regenerative and Low-Carbon Economy Slovenia project held in Slovenia in 2023, is expected to produce critical insights as the European Union embraces the Green Deal, and set an example with regards to aligning and synergizing policy instruments and legislation. Enabling a process for decarbonizing Slovenia's socio-economic system, it aims to build partnerships to create a deep demonstration of rapid change to a circular, regenerative and low-carbon economy and society. An integrated platform linked to a contact database and website will enable dissemination of results and the capture of high-quality data. The main beneficiaries of this work will be Slovenian local communities, and companies and stakeholders from across different sectors and value chains. Train-the-trainer workshops will be held locally to train Slovenian experts, and expertise will remain in the country after the completion of the deep demonstration.

The programme is focused on three pillars:

- Smart and circular communities (circular schools, circular learning and resources, circular synergies)
- Circular development (circular discovery, circular performance, SME circular innovation support)
- Circular policy design and science (pioneering circular higher education transition policy lab, circular procurement).

Circular Economy Action Plan

The European Green Deal

SYMBI "IS REPORTING AND CERTIFICATION SYSTEMS" WORKSHOP | MOLISE, 2022

In September 2022, Chamber of Commerce Molise will organize an on site workshop on IS reporting and Certification Systems.

Objectives of the workshop will be to:

- Discuss and work together on how to integrate industrial symbiosis (IS) reporting and certification systems in territorial policy planning, to enhance value chain resilience.
- Identify ways to promote IS reporting and certification systems' further adoption by relevant businesses, focusing on the European Commission's industry-led reporting and certification system, as envisioned by the updated Circular Economy Action Plan.

CIRCULAR ECONOMY - FROM THEORY TO PRACTICE | KRAKOW TECHNOLOGY PARK, 2022

On May the 30th -31st, 2022, the Krakow Technology Park and the Marshal's Office of the Małopolska Region in Poland, will organize the event "Circular economy - from theory to practice" in the framework of European Commission initiative: Science Meets Regions, managed by the DG Joint Research Centre.

The event aims to educate, promote different circular economy solutions in the region and exchange good practices and the development of tools supporting the transition to a circular economy, including taking measures for a more effective use of products, raw materials and waste by implementing industrial symbiosis.

These meetings will identify the needs of entrepreneurs in the area of circular economy, initiate cooperation between entrepreneurs and science, outline new business models and show the direction of activities for non-governmental organizations in order to support their transformation towards a zero-waste society.

Partner's News

MUNICIPALITY'S OF KOZANI NEXT STEPS TOWARDS CIRCULAR ECONOMY

Municipality of Kozani has implemented a two year Action Plan towards circular economy (2020-2021), which focused mainly on the diffusion of the circular economy idea and principles, to stakeholders, citizens and employees.

In 2021, the municipality continued its efforts by creating a more comprehensive action plan for the 2022-2027 period, aiming to the mapping of sustainable interventions for the promotion of Circular Economy and the synthesis of circular applications, which will bring economic, social and environmental benefits. This effort was financed and approved by the Greek Green Fund.

THE VISION OF THE MUNICIPALITY OF KOZANI IS:

- To be a pioneer municipality in the adoption of circular economy practices in Greece, by shaping new circular economy patterns and governance practices at the local Government level
- To utilize circular economy practices and the related funding to create new jobs that will offset part of the de-lignification losses
- To develop innovation structures and practices that will create long-term comparative advantages for the Municipality and its residents

Circular Economy Action Plan of Municipality of Kozani (2022-2027) No Actions: 1 Estimated Budget: 200.000,00€ Regulatory and Building stock & legislative infrastructure arrangements No Actions: 3 .500.000,00€ No Actions: 5 Transportation & Estimated Budget: Technology and vehicle fleet 1.350.000,00€ information actions management Solid and liquid waste Agricultural facilities & No Actions: 9 management, cleaning Estimated Budget: 13.500.000,00€ & green services No Actions: 2 Estimated Budget: 350,000,00€ promoting circular Innovation entrepreneurship No Actions: 5 Circular consumption Estimated Budget 110.000.000.00€

THE ACTION PLAN INCLUDES A COHERENT SET OF ACTIONS, STRUCTURED IN THE FOLLOWING 9 PILLARS:

- PILL AR 1: REGULATORY AND LEGISLATIVE ARRANGEMENTS
- PILLAR 2: TRANSPORTATION AND VEHICLE FLEET MANAGEMENT
- PILLAR 3: SOLID AND LIQUID WASTE MANAGEMENT, CLEANING AND GREEN SERVICES
- PILLAR 4: STRENGTHENING AND PROMOTING CIRCULAR ENTREPRENEURSHIP
- PILLAR 5: CIRCULAR CONSUMPTION
- PILLAR 6: INNOVATION
- PILLAR 7: AGRICULTURAL FACILITIES AND CROPS
- PILLAR 8: TECHNOLOGY AND INFORMATION ACTIONS
- PILLAR 9: BUILDING STOCK AND INFRASTRUCTURE

The evaluation of the proposed actions shows that:

- Actions related to the new type of entrepreneurship, innovation and industrial symbiosis, receive the highest score
- The interconnection of business units and the creation of local markets for secondary materials and products are preconditions and at the same time results of the turn to circular economy
- Actions with immediate benefits are those that extend discrete management of materials, and streams that either
 do not exist or exist in the early stage in the region at the moment
- The circular economy park is a link among most of the pillars

The next step of the Municipality of Kozani is the implementation of two pilot projects that immerged from the Action Plan: (1) the pilot program "Pay-As-You-Throw (PAYT)" and (2) the pilot operation of "Sorting Material Centres" in Kozani, which will also be funded by the Greek Green Fund.

OPEN BIO-ECONOMY WEEK ORGANIZED | MAY 2022, HAMEENLINNA, FINLAND

Conferences



The third **Open Bio-economy Week** organized on 18-19.5.2022, in Hämeenlinna, Finland, is an annual scientific conference bringing together different academics, researchers, stakeholders, policymakers, business representatives and the society, that highlights the current research innovations, trends, and future of bio-economy through the lens of digitalization and data utilization.

Sustainable development and circular economy were one of the cross-cutting themes of Open Bio-economy Week 2022. The conference was supported by the Regional council of Häme and was organized by the Finnish SYMBI partner Häme University of Applied Sciences, together with leading national research and innovation organizations such as the Natural Resources Institute Finland (Luke), Finnish Environment Institute (SYKE) and University of Helsinki. In addition, the Scientific Committee included Aalto University, VTT Technical Research Centre of Finland, and University of Feevale in Brazil.

Partnership

















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