

A systemic approach to support the transition of Bosnia and Herzegovina to the circular economy (CE)

***A report from the workshop in Sarajevo (Bosnia and Herzegovina),
April 2023***



Koper, April 2023

EUSAIR Facility Point project partners: Government Office for Development and European Cohesion; Ministry for Europe and Foreign Affairs of the Republic of Albania; Directorate for European Integration of Council of Ministers of Bosnia and Herzegovina; Ministry of Tourism of the Republic of Croatia; Special Service for Strategy, Planning and Evaluation (EYSSA), National Coordination Authority of the NSRF, Ministry of Development and Investments; Marche Region - Industry, Handicraft, Cooperation and Internationalization; Government of Montenegro, European Integration Office; Ministry of European Integration of the Republic of Serbia; Municipality of Izola.

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Introduction

The aim and the goal of the workshop related to the systemic approach to support the transition of Bosnia and Herzegovina to the circular economy (CE):

Each of the countries in the Adriatic-Ionian region has either developed or is in the process of developing or adopting a Roadmap for Circular Economy. Non-EU countries with economies in transition, particularly those with inadequate waste management, have great opportunities and potential to pay special attention to this issue. Relevant experts from the EU and the region who would participate in the Workshop in Bosnia and Herzegovina will provide information on why and how approaching the transition to the circular economy.

Chairs: EUSAIR Pillar Coordinators for TSG 3

Participants of the workshop: EUSAIR Pillar Coordinators for TSG 3 and TSG 3 members, coordinators, and members from TSGs, EUSAIR Facility Point representatives, Commission representative(s), representatives from the sectors/Ministries, interested public, potential projects beneficiaries/partners.

Venue: Hotel Marriott, Skenderija 1, Sarajevo, Bosnia Herzegovina

Date: Wednesday, 19.4.2023, 15.00 – 18.45

The workshop was implemented within the framework of the EUSAIR Facility Point project, which is co-financed by the INTERREG V-B Adriatic-Ionian Cooperation Program 2014-2020, the European Regional Development Fund (ERDF) and the Instrument for Pre-Accession Assistance (IPA II), as well as national funds.

1. Programme of the workshop

Section 1: Supporting the transition the circular economy in Bosnia and Herzegovina – why and how?	
Moderator of the workshop: Ram Dušić Hren	
14:30 – 15:00	<i>Welcome coffee - Registration</i>
15:00 – 15:10	1. Opening speeches by TSG3 pillar coordinators <ul style="list-style-type: none"> • Mitja BICELJ, EUSAIR Pillar Coordinator for TSG 3, Slovenia • Senad OPRAŠIĆ, EUSAIR Pillar Coordinator for TSG 3, Bosnia and Herzegovina
15.10 – 15.25	2. The Current State of CE in Bosnia and Herzegovina: Challenges and opportunities in transitioning to the CE <ul style="list-style-type: none"> • Center for Economic, Technological and Environmental Development Sarajevo – CETEOR, Adna Šovšić
15.25 – 15.40	3. The importance of the detailed energy audits in advancing CE in process industries – case study SSL Lukavac, BiH <ul style="list-style-type: none"> • Center for Economic, Technological and Environmental Development Sarajevo – CETEOR, Muamer Hromić
15:40 – 16:00	4. The role of the CE in the green transition of the Western Balkans and the Adriatic – Ionian region <ul style="list-style-type: none"> • Circular Change, Marco Segovia (online)
16:00 – 16:15	5. Deep demonstration project in Slovenia <ul style="list-style-type: none"> • EIT Climate KIC, Bart Stegeman (online)
16:15 – 16:30	6. SRIP Circular Economy – supporting CE in Slovenia <ul style="list-style-type: none"> • ŠGZ – SRIP Circular Economy, Nina Kovačič (online)
16.30 – 16.45	7. Interactive session: Transferring good practices in CE to BiH (online with menti meter)
Section 2: Building circular and digital communities and business models	
16:45 – 17:00	8. An example of the Circular4.0 community of the Alpine Space <ul style="list-style-type: none"> • Majda Potokar MSc, Technology Park Ljubljana 9. New digital technologies (VR/AR, blockchain, AI) supporting the transition to the CE <ul style="list-style-type: none"> • Aleš Pevc, Technology Park Ljubljana (online)
17:00 – 17:15	10. Good practices of the CE in SMEs <ul style="list-style-type: none"> • Kostja Klabjan, Energy+ d.o.o./Clera.one, microplastics (online) • Andreja Palatinus s.p., marine litter recycling (online)
17:15– 17:30	<i>Coffe break</i>
Section 3: Tools and approaches of the circular economy	
17:30 – 17:45	11. Circular economy design – a key model of the CE <ul style="list-style-type: none"> • Bojana Fajmut, designer
17:45 – 18:00	12. LCA analysis as a tool of measuring the CE impact <ul style="list-style-type: none"> • University of Maribor, Dr. Annamaria Vujanović (online)
18:00 – 18:45	13. Interactive discussion and conclusions
18:45	<i>Light dinner and networking</i>

KEY TAKEAWAYS FROM SPEAKERS

1. The Current State of CE in Bosnia and Herzegovina: Challenges and opportunities in transitioning to the CE (Center for Economic, Technological and Environmental Development Sarajevo – CETEOR, Adna Šovšić):

- Circular economy (CE) is gaining interest in BIH, although there is no systematic approach and public institutions do not drive the transformation.
- There are some existing laws addressing waste management, but significant improvement is still needed.
- Roadmap for CE in BIH is being drafted.
- Key drivers of CE include reducing dependence on raw materials, reducing cost, reducing environmental impact, improving competitiveness, and accessing new markets.
- Key barriers include lack of financial resources and incentives, lack of regulatory framework, lack of internal capacity, difficulties in importing scarce raw materials.
- Collaboration is needed between public sector, universities, and business.

2. The importance of the detailed energy audits in advancing CE in process industries – case study SSL Lukavac, BiH (Center for Economic, Technological and Environmental Development Sarajevo – CETEOR, Muamer Hromić):

- The purpose of audits is determining the efficiency of energy and water consumption and recommending ways to improve it.
- Analysis was done based on water and energy bills for a 3-year period and based on measurements in the facility.
- Measures to increase efficiency were proposed, together with estimated CO2 reductions, cost savings and investment payback period.
- The analysis shows that proposed measures have both environmental and financial benefits.

3. The role of the CE in the green transition of the Western Balkans and the Adriatic – Ionian region (Circular Change, Marco Segovia):

- Circular economy is a paradigm shift from the linear economy, where materials flow just in one direction, leading to problems like waste, resource depletion and climate change
- Circular economy is a systemic solution framework, based on three principles: eliminate waste and pollution, circulate products and materials, regenerate nature.
- Examples of frameworks were presented: Butterfly diagram (Ellen MacArthur Foundation) and the 9R framework.
- Policy frameworks: European Green Deal, Sofia Declaration (for Western Balkans)
- Practical instruments include CE roadmaps, CE hubs/platforms and financial investment frameworks.
- Regional examples of successful projects/initiatives were presented.

4. Deep demonstration project in Slovenia (EIT Climate KIC, Bart Stegeman):

- Deep Demonstration is a joint undertaking of Climate KIC and Slovenian government to initiate rapid systemic transition towards circular, regenerative, low carbon economy.
- Experimentation, evaluation of success and learning from experience is an important part of the process.
- Due to the complexity of the transition, a systemic change requires collaboration and dialogue on all levels
 - social, policy, business, research

5. SRIP Circular Economy – supporting CE in Slovenia (ŠGZ – SRIP Circular Economy, Nina Kovačič):

- Strategic Research and Innovation Partnership (SRIP) for Circular Economy was established under the Slovenian Sustainable Smart Specialization Strategy (S5)
- The vision of the partnership is: Sustainable increase of efficiency and competitiveness of Slovenian economy in the transition to circular economy.
- SRIP is financed 50% by the state and 50% from membership fees, with 93 members (majority companies)
- The main services of the partnership include consulting for development and research projects, connecting in circular value chains, education about circular business models and internationalization.
- 6 focus areas are: Sustainable energy, Biomass and alternative raw materials, Secondary raw materials, Functional materials, Processes and technologies, Circular business models.

6. An example of the Circular4.0 community of the Alpine Space (Majda Potokar MSc, Technology Park Ljubljana):

- Circular4.0 project aimed to support SMEs in Alpine Space on the transition to circular economy with the use of digitalisation and Industry4.0
- A body of knowledge was established, as well as a set of tools and a methodology for facilitating the transition.
- 295 SMEs went through the process and continue to be a part of the community and the circular ecosystem.
- Toolkit, training, and a catalogue of best practices are available at Circular40.eu.

7. New digital technologies (VR/AR, blockchain, AI) supporting the transition to the CE (Aleš Pevc, Technology Park Ljubljana):

- Transition to circular economy is impossible without technological innovations.
- Technologies such as blockchain can enable transparent value chains, material traceability and new business models.
- With virtualization, more can be done remotely, new learning experiences can be implemented, and fewer physical products are needed. Example of a VR exhibition of the Circular4.0 project
- AI enables smart systems in all domains, from energy to agriculture. Predictive capabilities and data insights mean that more can be done with less.

8. Good practices in SMEs: Clera.One (Dajana Jeglič, Clera.One):

- Clera.One tackles the problem of microplastic pollution and water consumption due to laundry.
- 30% of microplastic pollution comes from laundry, while 150l of clean water is being wasted per wash.
- The company designed a closed water loop filtration system for industrial laundries and water treatment facilities that tackles both issues.
- Captured microplastic is suitable for reuse in construction sector.

9. Good practices in SMEs: marine litter recycling (Andreja Palatinus s.p.):

- Demand for recycled plastic exists (example of IKEA's collection KASEBERGA), but there is no local development or local providers.
- REMEDIES is a Mission Horizon programme co-funded by the European Commission that aims to jointly develop solutions for the future of our oceans by exploring ways to valorize and prevent plastic waste.
- Marine litter is collected, and the types of polymers are being determined, after which the materials are sorted by hand to be recycled.

- EU Waste list does not include the category “marine litter.”

10. Circular economy design – a key model of the CE (Bojana Fajmut, designer):

- Designers need to have a big picture of the product they’re designing in mind.
- It has been experimentally verified that people are more likely to hold on to a well-designed, lasting teacup, than a single use plastic one, if it’s boiling hot. Meaning the design is an important factor in how we treat things.
- At every stage of the design process, we must increase the value for the user while reduce the harmful impacts.
- Rethinking single use packaging as a creative process - can the water be contained in digestible containers instead of single-use bottles? Can the plant pots be planted together with the plant?
- Rethinking fast fashion - Does fashion need to be physical?

11. LCA analysis as a tool of measuring the CE impact (University of Maribor, Dr. Annamaria Vujanović):

- Life Cycle Analysis is a tool for measuring the environmental impact of products and services.
- When deciding about what changes to implement, this analytical approach gives data-based decision support.
- Different models can be chosen for the analysis, depending on the purpose of the analysis - such as cradle-to-cradle or cradle-to-gate.
- Determining the scope and purpose of the analysis upfront is key.

PHOTOS



2. Conclusions

Lack of knowledge and low adoption of circular economy are still strong barriers in BIH. Therefore, capacity building, awareness and education should be an important part of the effort to move towards a circular economy. The content of this workshop was an important part of this capacity building - by knowledge sharing, cross-border cooperation and multi-stakeholder discussion, awareness and adoption are rising and collaboration at the systemic level is being strengthened.

Based on the discussion in the workshop, there is momentum and interest for circular economy, but not enough systemic support. Cross-sectoral collaboration is therefore needed to establish the basis for systemic change. Also, a transparent and coordinated system is needed to prevent the abuse of public resources.

Cross-border/regional partnerships can also enable BIH to get more support, both in terms of funding and in terms of capacity building.

EUSAIR TSG 3 has conducted a study titled "Support for the process of coordination and development the work of the EUSAIR pillar Environmental Quality in Innovation: Innovation Expert analysis - Eco-innovations & circular economy". Iztok Škerlič as the representative of the Pillar proposed the following actions on the regional level to be followed after the workshop, based on the results of the study:

- Start with awareness rising and promotion activities to change user mindset and values, thus influencing consumer/user behavior and lifestyles toward higher levels of sustainability, focus on marketing innovation in circular economy (little has been found about marketing innovations in review of projects) in the funding of program calls
- Setting up regional "ECO-INNOVATION-LIVING-LABs", that could operate on different levels. Potential activities related to such entity, composed of different stakeholders, and meaningfully integrated in the university environment are presented below:
 - Establish a "Think-tank" and consultation body for the transfer of program documents into implementation strategy for smaller regions, areas or cities, representing a link from macro to micro
 - Develop a digital repository of business practices about circular economy and implemented eco-innovations, with their descriptions and contacts, with better segmented in terms of relevance for specific stakeholders, industries etc., leading to a regional, systematic repository
 - Showcase how selected eco-innovations really work in practice, but exposing to companies that this might have also positive economic effects of their operation, demonstrating how can users be engaged in them and co-create them; involvement of consumers is a key
 - Propose educational seminars, workshops and academies about eco- innovation implementation for different target groups in collaboration with academics and professionals
 - Organize local, regional and potentially international challenges as competitions for

- the best ideas/practices eco-innovation and circular economy (on different levels of education; primary, secondary, university level) to increase awareness and influence consumer values (Show me how you...save water...recycle...reuse...repair”, present me your idea “How you would best...organize collection of waste in your city, school...”events for planting new trees, thematic drawings...”Nature as a classroom” etc)
- Marketing and PR activities, with focus on social media, influencers, building communities and “movements” (e.g., “#me too for....our planet....clean ocean...nature preservation”.

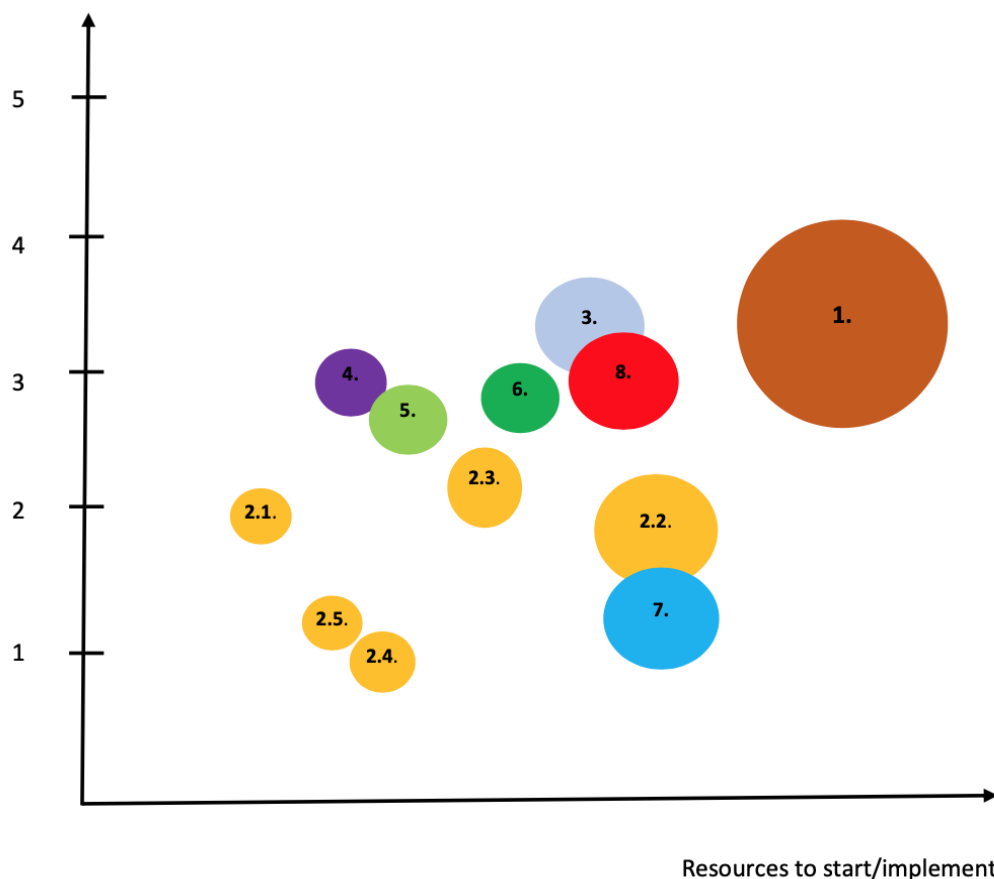
 - Develop interdisciplinary educational study programs on post-gradual levels, focused on management of sustainable development, summer business schools, inclusion of professionals as guest speakers into undergraduate study programs
 - Create local networks of stakeholders and partners to introduce eco-innovation and circular economy practices in order to explore the possibilities of coordinated activity, vertically connect different stakeholders, and contribute to overcome identified barriers
 - Develop and propose more public tenders for adoption of eco-innovation and circular economy to include different kind of organizations of thematic clusters with focus on specific innovation elements related to eco-innovation and business practices about circular economy (build on identified projects with eco-innovations and circular economy business practices)
 - Measure the regional eco-innovation performance to drive regions’ ambitions while benchmarking them against other regions and increase their performance (upgrade of eco-innovation index relative for country benchmark)
 - Further study of key obstacles of implementation of eco-innovation, since relatively few projects with elements of eco-innovation and circular economy have been identified among the completed and analyzed projects
 - Continue monitoring, research, data collection, analyses, identification of trends and best practices of circular economy and eco innovation, as well as funded projects, potentially with the framework developed and used in this study

The images below show the classification of these proposals based on resource and time intensity:

Color/Number	Measure/proposal	Stakeholders involved
1.	Program calls directed toward marketing innovation in circular economy – awareness rising and promotion activities	Managing authorities, ministries
2.1.	Eco-innovation-living-lab: consultation body	Experts, faculties, municipalities
2.2.	Eco-innovation-living-lab: digital repository of business practices about circular economy and eco-innovations	Marketing agency, IT company, faculties, enterprises
2.3.	Eco-innovation-living-lab: demonstration of operation & effects of eco-innovations and circular economy business practices to wider public and businesses	Businesses, students, wider public, influencers
2.4.	Eco-innovation-living-lab: seminars, academies, workshops	Faculties, experts
2.5.	Eco-innovation-living-lab: challenges as competitions for the best ideas/practices eco-innovation and circular economy	Faculties, schools, kindergartens
3.	Local networks of stakeholders and partners to introduce eco-innovation and circular economy practices	Ministries, experts, governments, NGOs, businesses, others
4.	Thematic clusters with focus on specific innovation elements related to eco-innovation & circular economy	Ministries, experts, governments, NGOs, businesses, finished project consortiums
5.	Benchmark of regions eco-innovation performance	Regions, ministries, experts
6.	Study of key local obstacles for implementation of eco-innovation and circular economy business practices	Experts
7.	Continuation of monitoring, research, data collection, analyses, identification of trends and best practices of eco-innovation and circular economy	Experts
8.	Formal educational programs (masters), summer schools, guest lectures	Faculties, experts

Source: Own categorization

Time/Years



Source: Own categorization