

# WEST UNIVERSITY OF TIMISOARA

Center for Sustainable Development,  
Cross-border Studies and Spatial Planning

Faculty of Chemistry, Biology, Geography,  
Department of Geography

Institute for Advanced Environmental Research  
Sustainable Development and Spatial Planning Laboratory

Agence Universitaire de la Francophonie  
Senghor Chair of the West University of Timisoara

## International Conference

### CIRCULAR ECONOMY - MULTIDISCIPLINARY PERSPECTIVES AND PRACTICAL APPLICATIONS

Timisoara, July 10-11, 2025

Registration Form (with Abstract): [click here](#)

Deadline submission: **May 31, 2025**

**Participation fee: 50 euro (or equivalent in lei)<sup>1</sup>**

(30 euros for students and PhD students)

## Conference general overview

### 1. The current context of the circular economy

***Circularity, a new practice?*** The practices of the circular economy are not new, but rather have been specific to traditional societies, where repairing, reusing and sharing goods were common practices. The scale of resource consumption with the industrial revolution and the subsequent proliferation of the consumer economy has led to a gradual abandonment of traditional habits. From a natural economy based on the utilization of renewable goods, after the use of which used goods and waste were returned to nature, there was a shift to an artificial economy. Its products, highly processed and mass supplied, have a high use-value, offer many conveniences, but perish rapidly and have characteristics that make them difficult to integrate into nature after use. This has led to over-consumption of resources and the loading of the planet with waste and pollutants that are difficult or impossible to reintegrate into nature, with the risk of changing global balances and the functionality of life-supporting elements.

***Gap and sustainability.*** Global consumption of material resources has increased from 43 billion tons in 1990 to 92 billion tons in 2017 (Allen et al, 2022), representing a 213.9% increase in just 27 years. Without the development of effective policies at the global level, this consumption will reach 190 billion tons by 2060 (UNEP SDG Report 2019), with negative impacts that will continue to accelerate.

This widens the gap between the rate of growth in resource consumption and the evolution of exploitable stocks. For many renewable resources, the rate of consumption is outstripping their regeneration capacity, and for non-renewable resources, the prospect of depletion is not offset by sufficiently sustainable alternatives. At the same time, much of the used goods and waste produced by today's society have intrinsic value. Re-used through responsible technologies, they would limit anthropogenic pressure on

---

<sup>1</sup> ***Bank details and account numbers where the participation fee can be transferred will be communicated in due time to those who have registered.***

primary resources, drastically reducing abandoned waste, improving the quality of the environment and contributing to a stronger legacy for future generations.

**Defining terms and principles of the circular economy.** At the level of the UN, EU structures and Member States, there has been a growing concern to promote circular economy principles and practices as a concrete solution to achieve several sustainable development objectives. Research has focused both on better defining the circular economy and its basic principles, and on identifying sectors where high-impact results can be achieved.

According to the European Parliament, "the circular economy is a model of production and consumption that involves sharing, renting, reusing, repairing, refurbishing and recycling existing materials and products for as long as possible". This extends the life cycle of products.

Kirchherr et al. (2017), after listing 114 definitions, define circular economy as "an economic system that is based on business models which replace the 'end-of-life' concept with reducing, alternatively reusing, recycling and recovering materials in production/distribution and consumption processes, thus operating at micro level (products, companies, consumers), meso level (eco-industrial parks) and macro level (city, region, nation and beyond), with the aim to accomplish sustainable development, which implies creating environmental quality, economic prosperity and social equity, to the benefit of current and future generations".

The circular economy is based on several **principles**, among which the following three are basic (SNEC, 2022):

- The principle of waste and pollution elimination, by designing products, materials and infrastructure so that they return to the economy after use;
- The principle of product and material recirculation, through maintenance, reuse and refurbishment, possibly by dismantling and remanufacturing, donation and, as a last resort, recycling;
- The principle of nature's regeneration, by improving natural environments, building biodiversity and adopting regenerative models that mimic the functioning of natural systems (there is no waste in nature; waste is a human invention).

## 2. Priority areas for action in the circular economy

At EU level, areas where **circular economy principles and practices** apply have also been defined, with a focus on key sectors:

- Electrical and electronic equipment and ICT products, whose waste streams are growing at well above average rates;
- Batteries and battery waste, whose sustainable management is a priority due to the massive growth of electric mobility;
- Packaging and packaging waste, which has grown much faster than the consumption of the products they contain;
- Plastics, whose generalization has led to an excessive increase in non-biodegradable waste and plastic micro-particles, which are dangerous for the environment and human health;
- Textiles, the separate collection of which is complicated because of their diversity, the mixture of fibers from which they are made and the transfer of textiles of uncertain status (second-hand, waste, etc.);

- Construction and buildings (responsible for 50% of EU resource extraction and consumption and 40% of EU energy consumption), for which new design and production requirements are being set to make them more sustainable, repairable, recyclable, green and easier to remanufacture;
- Food products, the responsible management of which must take into account their strategic nature, perishability, but also the need to reduce food waste and ensure the safe transfer of surpluses to people in need;
- Waste reduction and wastewater recirculation; in addition to waste reduction, waste needs to be classified as reliably as possible to facilitate the development of organizational and technical solutions for recycling in specific supply chains.

For each of these sectors, the EU has developed or is working on circularity strategies, regulations and directives to respond to the challenges of today's world, whose balances are affected by global changes, from climate change to the changing social matrix under the impact of the knowledge economy and artificial intelligence.

### 3. Actors of the circular economy

*At the heart of the circular economy's regenerative model, products, equipment, materials and waste are considered as useful resources whose value must be preserved for as long as possible. This approach requires the commitment and collaboration of several types of actors, whose actions should be complementary and convergent, as follows:*

- **Public institutions** at all levels, from governmental to local, play a crucial role as they set the enabling legislative and regulatory framework, monitor the implementation of regulations and take action to achieve the policy objectives set, thus ensuring coherence and functionality of the actions of all other actors involved;
- **Enterprises and producers** are key actors, called upon to review their production patterns to minimize waste and maximize the use of resources. From eco-design of products to waste recovery, companies are committed to reducing their environmental footprint, aware of their responsibility and motivated by the underlying economic benefits;
- **Consumers** have the power to shape the market through their choices and buying habits. By favoring sustainable, repairable and recyclable products, consumers encourage companies to adopt greener practices. Education and awareness are key to promoting responsible and informed consumer behavior. Responsible consumers, on the other hand, can contribute to improved performance in this area through the mechanisms of citizen science.
- **Non-governmental organizations and non-profit associations** play a major role in raising awareness, educating and catalyzing the transition to more circular practices. Strongly committed to sustainability and the circular economy, they promote new concepts that help educate both consumers and producers and persuade authorities to renew regulations. This is the case, for example, with the ecomimetic 'Cradle to Cradle' (C2C) concept, developed in the 1980s and subsequently affirmed (McDonough and Braungart, 2002);
- **Schools, universities and research centres** play a crucial role in transmitting new patterns of behavior to the younger generation, who are primarily expected to bring about change. Children and young people are permeable to the new and open to supportive and sustainable behaviors if information about them reaches them in a convincing, digestible and operational form. Universities also have a research component, which can involve both experienced specialists and creative young people in applied projects, in cooperation with the authorities, the economy and associations.

## 4. Territorial dimensions of the circular economy

These are less addressed in the literature, despite the fact that economic circuits are geographically localized, respond to the needs of territorial collectivities and are the result of their action. Territorial analyses focus on issues of scale and the exercise of skills, i.e. the effectiveness of circuits. But the relationships between the circular economy and sustainable territorial development can be addressed (Niang et al., 2018) through several types of approaches, as follows:

- Through operational approaches, inspired by the functioning of natural ecosystems, as in the case of the industrial territorial economy (EIT), where the aim is to optimize the looping of material and energy flows in order to limit the negative environmental impacts of industrial activities at the local level, for example in an industrial area or a neighborhood. Other local actors, in particular citizens, are also beneficiaries of the system of pooling and substitution of resources, infrastructures, flows, etc.;
- Through the trajectories of innovation, as the circular economy introduces a profound revision of the dominant modes of linear production and consumption, implemented (also) at the territorial level (= innovation);
- Through the proximity-induced governance of the circular economy, which favours the economics of functionality, specific to both restricted territories (geographic proximity) and dispersed spaces (reticular social/technical proximity). Geographic proximity is sought for the ease of moving flows (which reduces transport costs), for productive partnerships between companies (which saves transaction costs) and through the participation of other territorial actors (which facilitates technological mobilization, innovations, knowledge sharing and collective learning) (Beaurain and Brulot, 2011)

There is also a need to **re-think territory** which, in this context, refers to the spatial application of the circular economy from a perspective of urban and social metabolism (Marin and de Meulder, 2018) which, in its economic activity, has a deep connection to place. The rethinking of territory is also linked to the territorial value of the circular economy which, beyond companies, is generated through collective participatory processes as well as digital landscapes as facilitators of circular activities in urban and peri-urban areas (Guarini et al., 2022).

The concept of circularity is also applicable to processes of territorial regeneration or revitalization and refers to the adaptive reuse of previous heritage (Guarini et al., 2022) or abandoned industrial sites (Jigoria-Oprea and Popa, 2017) for the benefit of neighbourhoods, cities and regions (= circular economy). This approach is relevant from a socio-economic perspective, as it does not only focus on the reuse of materials, but rather on a revitalization of the organizations and social networks surrounding heritage, most frequently consisting of buildings.

## 5. Social dimensions of the circular economy

The theme of the social dimensions of the circular economy implies at least 2 main complementary perspectives. The first one is upstream and concerns perceptions, knowledge, attitudes and social involvement in the development of the circular economy, and the second one is downstream and concerns the social impact of the circular economy.

The first dimension has been little explored in academic research and even less addressed in practice, although the success of the human factor's adherence usually depends on moving from theoretical concepts to systematic and accepted practices. The prevalence of postpositivist thinking in the sphere of economic, especially industrial, activities has made relatively little room for reflection on the role of social

contexts and social networks as part of social capital (Walker et al, 2021). The increasing involvement of stakeholders has changed the epistemology of the field, leading to a shift from a positivist perspective to a more constructivist perspective that recognizes the subjective nature of knowledge (Nakamba et al, 2017), which can impact economic processes in contradictory ways.

Regarding the second perspective, the International Association for Impact Assessment defines social impacts as "the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions" (Vanclay et al., 2015). These impacts are manifested in 8 domains, namely: in the way of life of the population, in its culture, on the cohesion of communities, the political system, the quality of the environment used, the health and well-being of the population, the accuracy of personal rights, and on the fears and aspirations of the population (Vanclay, 2003, in Vanhuysse et al., 2021).

Both perspectives can be approached in an integrated way, based on the stakeholder theory founded by Freeman (1984) and further developed. The analysis can be carried out using the quadruple helix methodology (authorities, economic actors, academic actors, population - Carayannis and Campbell, 2009), including by drawing on the specific procedures of citizen science (Kerson, 1989). Citizen science defines the involvement of "citizen scientists" voluntarily and actively engaged in collaborative scientific projects in order to design research, collect and analyze data, and for the dissemination of science (Purtova and Pierce, 2024).

Social involvement and social sustainability must be seen as outcomes of learning and, more broadly, of education, which is a decisive factor in the success of any human action, regardless of the environment or sector in which it takes place (natural, man-made, rural, urban, industrial, agricultural, services, infrastructure, habitat, movement, etc.).

## **6. Objectives of the conference**

- 1. To put in interdisciplinary dialog the complementary sectoral visions and competences asserted in the sphere of circular economy (conceptual axis);**
- 2. Exchange of experience, by mobilizing strategies for shaping sustainable attitudes and behaviours from the perspective of generalizing circularity practices (educational and behavioural axis);**
- 3. Discussing circularity initiatives and experiences, obstacles and actual breakthroughs achieved in different fields, with a view to optimizing processes and scaling up good practices (economic axis);**
- 4. Comparative analysis of the regulatory framework for the circular economy, the involvement of the authorities and the associative sector, in order to optimize the conditions for the affirmation of circularity practices (legal and public responsibility axis).**

## **7. The proposed issues**

Starting from the Sustainable Development Goals launched by the United Nations in 2015, the issues of this colloquium, circumscribed to the circular economy, aim at a set of questions to which participants are invited to answer through proposals for scientific papers, institutional testimonials, examples of best practices, legal and regulatory framework optimization analysis, examples of creative processes and samples of innovative products in the field of circularity.

### **Are there socio-economic areas that cannot be optimized through circularity practices?**

If there are, they are marginal, as most social-economic sectors can implement circularity practices to reduce resource consumption and negative environmental impacts. Examples of good practices and successful initiatives are contributing to the implementation of the circular economy in more and more areas of activity, from industry and agriculture to construction, infrastructure, services, utilities management and the residential economy.

### ***What conceptual categories and methodologies for the study of circularity have been developed in the last decades to better understand its problematics, to provide a better understanding of it and practical solutions for its implementation?***

The conceptualization of the circular economy has constantly evolved, either in parallel with circularity practices, or anticipating and underpinning them, in order to clarify the interactions between economic agents, the population and the authorities, in varied environmental contexts.

### ***What is the role of education in disseminating circular economy concepts and practices and what innovative ways/strategies that can be replicated in the marketplace of ideas exist in the field of education?***

The education system plays a key role in the responsible renewal of social behaviors through awareness of sustainability trends and examples of good practice. The reconfiguration of curricular areas is one tool, but there may be others, related to knowledge, methods, personal example, organization and collective responsibility.

### ***How can research contribute to the dissemination of circularity practices, beyond the creation of otherwise decisive sustainable and innovative technical and organizational solutions?***

Research, especially applied research, is today a complex outcome, involving not only universities and public research institutes, but also private companies, whose role in the innovation market has clearly increased. Collaboration between research providers to continuously improve technical solutions, transformative technologies and circular economy practices is a good way of doing this, as is increasing the visibility and applicability of innovations.

### ***Is the policy, legal and regulatory framework developed in such a way that circular economy practices are attractive to all stakeholders in specific market economy contexts?***

Regulations in the areas of the circular economy are being further specified and refined, ranging from the reports and resolutions adopted by the UN in the context of the Sustainable Development Goals, to those adopted by the OECD, to EU regulations on specific areas of circularity, which are being translated into national strategies and regulations, and into functional territorial practices.

## **Selected bibliography**

Allen van, O., Sverdrup, H. U, and Olafsdottir, A. H, 2022, 'Global resources and the future. Any room for the circular economy?', in vol. *The Impossibilities of the Circular Economy. Separating Aspirations from Reality*, edited by Lehman, H., Hinske, C., Margerie de, V., Slaveikova Nickolova, A., 2022, Routledge, London (332 p). <https://www.taylorfrancis.com/chapters/oa-edit/10.4324/9781003244196-24/global-resource-use-future-ole-van-allen-harald-sverdrup-anna-hulda-olafsdottir>

- Beaurain C., and Brullot S., 2011, « L'écologie industrielle comme processus de développement territorial : une lecture par la proximité », *Revue d'économie régionale et urbaine*, n° 2, p. 313-340, <https://www.cairn.info/revue-d-economie-regionale-et-urbaine-2011-2-page-313.htm>.
- Carayannis, E.G. and Campbell, D.F.J. 2009, "Mode 3' and 'Quadruple Helix' : Toward a 21st Century Fractal Innovation Ecosystem", *International Journal of Technology Management*, Vol. 46, No. 3-4 (<https://doi.org/10.1504/IJTM.2009.023374>)
- Guarini, M.R., Morano, P., Sica, F., Spina, L., Della, and Giorno, C., 2022. "Waste landscape: urban regeneration process for shared scenarios". *Sustainability*, vol. 14, p. 2880. <https://doi.org/10.3390/su14052880>
- Jackson, T., 2009 and 2017, *Prosperity without growth? The transition to a sustainable economy* (report of the Sustainable Development Commission - 2009), Routledge, London, 2017
- Jigoria-Oprea, L. and Popa, N., 2017, "Industrial brownfields: An unsolved problem in post-socialist cities. A comparison between two mono industrial cities: Reșița (Romania) and Pančevo (Serbia)", *Urban Studies*, vol. 54, Issue 12 (pp. 2719-2738), first published on July 1, 2016; <https://doi.org/10.1177/0042098016655057>
- Kerson, R., 1989, "Lab for the environment". *MIT Technology Review*, 92(1), 11–12.
- Kirchherr, J., Reike, D., and Hekkert, M. (2017). Conceptualizing the circular economy: An analysis of 114 definitions. *Resources, Conservation and Recycling*, 127, 221–232. <https://doi.org/10.1016/j.resconrec.2017.09.005>
- Marin, J. and de Meulder, B., 2018, "Urban landscape design exercises in urban metabolism: reconnecting with Central Limburg's regenerative resource landscape", *Journal of Landscape Architecture*, 13 (2018), pp. 36-49, [10.1080/18626033.2018.1476031](https://doi.org/10.1080/18626033.2018.1476031)
- McDonough, W., and Braungart, M., 2002, *Cradle to Cradle: Remaking the Way We Make Things*, North Point Press, SUA (193p)
- Nakamba, C.C., Chan, P.W., and Sharmina, M., 2017. "How does social sustainability feature in studies of supply chain management? A review and research agenda". *Supply chain management*, Vol. 22, Issue 6, pages 522 – 541. <https://doi.org/10.1108/SCM-12-2016-0436>
- Niang, A., Bourdin, S., and Torre, A., 2020, « L'économie circulaire, quels enjeux de développement pour les territoires ? », *Développement durable et territoires* [En ligne], Vol. 11, n°1 (DOI : <https://doi.org/10.4000/developpementdurable.16902>)
- Purtova, N. and Pierce, R. L. 2024, "Citizen scientists as data controllers: Data protection and ethics challenges of distributed science". *Computer Law and Security Review*, 52. <https://doi.org/10.1016/j.clsr.2023.105911>
- SNEC, 2022, *Strategia Națională privind Economia Circulară* (proiect). [https://sgg.gov.ro/1/wp-content/uploads/2022/08/Strategia-economie-circulara\\_18.08.2022.pdf](https://sgg.gov.ro/1/wp-content/uploads/2022/08/Strategia-economie-circulara_18.08.2022.pdf) (accesată în 27 ian. 2025)
- UNEP, 2019, *The Sustainable Development Goals Report*, New York <https://unstats.un.org/sdgs/report/2019/The-Sustainable-Development-Goals-Report-2019.pdf>
- Valencia, M., Bocken, N., Loaiza, C., and De Jaeger, S., 2023, "The social contribution of the circular economy", *Journal of Cleaner Production*, 408 (2023) 137082, <https://doi.org/10.1016/j.jclepro.2023.137082>
- Vanhuyse, F., Fejzic, E., Ddiba, D., and Henrysson, M., 2021, "The lack of social impact considerations in transitioning towards urban circular economies: a scoping review", *Sustainable Cities and Society*, vol. 75 (2021), p. 103394, <https://doi.org/10.1016/j.scs.2021.103394>
- Walker, A.M., Opferkuch, K., Lindgreen, E.R., Simboli, A., Vermeulen W. J.V., and Raggi, A., 2021, Assessing the social sustainability of circular economy practices: Industry perspectives from Italy and the Netherlands, *Sustainable Production and Consumption*, vol. 27 (2021), pp. 831–844. <https://doi.org/10.1016/j.spc.2021.01.030>  
<https://www.europarl.europa.eu/topics/ro/article/20151201STO05603/economia-circulara-definitie-importanta-si-beneficii>

**Scientific Committee:**

**President:**

*Prof. Dr. Nicolae POPA – West University of Timisoara*

**Members:**

*Prof. Dr. Emmanuel BIOTEAU – University of Angers, France*

*Prof. Dr. Cristina POCOL – University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca*

*Prof. dr. Antonia ODAGIU – University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca*

*Prof. Dr. Imen KANCHEL – University of the Manouba, Tunis, Tunisia*

*Conf. Dr. Ștefana DIMA – West University of Timisoara*

*Lect. Dr. Alexandra MARIAN-POTRA – West University of Timisoara*

**Organization Committee:**

*Prof. Dr. Nicolae POPA - President*

*Lect. Dr. Alexandra MARIAN-POTRA*

*Cercet. Drd. Amelia ILE*

*Cercet. Drd. Denisa CAIZER*

*Drd. Vlad CUMPĂNAȘ*

**Note: Conference communication languages: English and French**