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Input Paper and Recommendations  
**Circular Economy in Higher Education**

**Author:** Elisavet Vasileiou (Graduate of Molecular Biology and Biotechnology, youth worker and project manager in EKO)

**EKO:** [info@ekogreece.com](mailto:info@ekogreece.com)



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**Summary:** The concepts of the Linear Economy model date back to the Industrial Revolution and still dominate economy and growth models around the globe. A wide range of social, economic and environmental factors make it all the more clear that the ‘take-make-use-dispose’ model of consumption it is no longer sustainable. Whilst many ideas and efforts have been put in place for business and industry to move towards a circular economy, a substantial contribution of Higher Education providers is indispensable for achieving a society-wide and viable transition to a “circular model” of growth.

### **Introduction**

The current dominant economic model of consumption and development is an unsustainable linear process of take, make, use, and dispose, which puts at risk the near-future resource sufficiency and incurs a heavy cost on the environment, and by extension, on human well-being. Circular economy (CE) is a concept that was introduced relatively recently by the European Union, as an answer to the threats the linear economic growth model entails. According to the circular model “the value of products, materials and resources is maintained in the economy for as long as possible, and the generation of waste minimised” (EU Action plan 2015). The transition to a CE, can only be conceived in terms of a systemic change, requiring changes in the economic, political and socio-cultural realms.

As it became clear during our work and research on Europe-wide case-studies, in the context of the “Sustainability through Cross-Border Circular Economy” project, public and private organisations and businesses are increasingly recognizing the value and opportunities the CE approach provides, and are making progress in introducing sustainable practices, despite the lack of conceptual consistency, and the administrative and cost-benefit barriers, which are still considerable.

However, industry and business alone cannot drive the systemic changes needed to achieve a true transformation of the current model of socioeconomic growth. Viable social changes presuppose a paradigm shift from individual behaviors & incentives (e.g. singular sustainability & innovation-oriented and businesses) to collective/cultural adoption of CE principles. This is where, the role of education enters our discussions, as education from an early age to higher education is in the position to instill new visions for our society and economy at the systemic level.

### **Role of HEI’s in advancing Circular Economy**

Given the major role Higher Education Institutions play in shaping the capacities and mentality of most of the professionals who are occupying key positions today and will do so tomorrow, it is clear that they can make substantial contributions in propelling the systemic changes required, through teaching, formal and “hidden” training curricula, applied research, collaboration with industry and student-led initiatives.

#### **1) Teaching (Formal and “hidden” training curricula)**

Introducing the concept of circular economy (CE), its principles, methods and links to economic performance,



social inclusiveness, and environmental resilience in formal HEI curricula is key to the development of a critical knowledge capacity, or else “circular-economy literacy”, in the new generations of professionals, experts, decision-makers and citizens, parallel to a continuous update of the relevant skills.

Supporting the emerging momentum in learning for a circular economy, we suggest that the following elements will promote quality formal learning outcomes:

- Extension of the range of disciplines in which sustainability and CE concepts are incorporated in the formal curriculum, from the traditional sustainability related studies (engineering, business, design) to other vital disciplines, such as economics, political science, as well as sociology and pedagogy
- Increasing the focus of CE course themes to areas, which we consider as essential for achieving the transition, i.e. the roles of policy levers and digital technology in accelerating the transition, the role of CE not only as a resource-scarcity protection mechanism, but also as an effective response to climate change, as well as social and cultural aspects of CE.

Equally important to promoting CE-literacy, is the development of a sustainability-mentality and ecologically-sensitized attitude, as a necessary step for our society to not only develop, but also use the tools for the transition to CE. In this respect, we suggest the following for increasing the quality of non-formal/informal learning outcomes:

- HEIs should put emphasis not only on the curriculum-based learning, but on all other sources of learning there exist within the educational facilities (e.g. incentivising and communicating CE-related extracurricular activities, clean energy campus, repairing facilities for goods such as electronic devices, zero-waste University canteens etc). The development of such a “hidden curriculum” plan, is set to create a healthy and inspiring environment that promotes environmental awareness and fosters eco-responsible behaviors among HEIs students and staff.
- HEIs should provide incentives and support for the operation of new circular economy enterprises on campus, as part of a “hidden curriculum” plan, would demonstrate the realistic business opportunities provided by sustainable commerce, and cultivate student skills through experience-based learning and active engagement

## ***2) Applied research & collaboration with Industry***

Universities are a primary driving force in research, knowledge advancement and generation of new technologies, while University-Industry cooperation is a catalyst for innovation. Thus, HEIs can be a key local, regional, or national partner for research and development of practical solutions that enhance circular economy, especially if they seek to establish synergies with industry partners already pursuing sustainability strategies.

There are several ways through which HEI-Industry collaboration can promote the adaptation of our current economic model to CE principles:

- Partnerships of Universities with local enterprises can be mutually-beneficial in terms of cutting material costs and finding new financing sources, with positive impacts on local economy



- HEIs should reorient research to exploring methods for the implementation of CE activities in business and the barriers companies have to overcome, since most of the literature on the CE, thus far, focuses on reviewing the concept and trying to establish a generally accepted definition
- HEIs should examine and build circular economy apprenticeship skills, provide evidence of industry demand for circular economy skillsets, and adapt teaching curricula accordingly

### 3) *Student-led initiatives*

Students moving, through higher education, from the position of knowledge-receptors towards positions of influence, are a key group that can be mobilized to learn, think, and act differently, with the aim to impact the linear system and serve as agents of change. Therefore, HEIs can play a key role in helping to promote circular economy approaches by engaging their students, inspiring them to be an active part of this exciting innovation agenda, CE represents, and provide them with ample opportunities to build the necessary skills and attitude. In this light, HEIs can enhance their capital by providing training grounds, where future professionals, leaders and citizens can become environmentally conscious, in the following ways:

- HEIs can enhance sustainability learning by providing real and innovative actions out of the lecture hall, that aim to increase environmental awareness and commitment to engage in appropriate action (e.g. organization of a Green Day)
- A fund for students and researchers, available for launching their own CE principles-abiding projects could serve as an incubator for sustainable enterprises

In conclusion, Higher Education is in a unique position to affect change, as it has a vast influence on the key prerequisites for society's transition to CE, i.e. a new kind of expertise, operational capacities, collaborative skills and schemes, and a general change in attitudes and mentality.

### **References**

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