CIRCULAR ECONOMY –THE OVERVIEW OF GOOD PRACTICE IN EUROPE

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Abstract. The concept of a circular economy is a challenge, but at the same time a great opportunity for economic and social development. Actions taken at the national level are necessary due to the depletion of natural resources, and more importantly, changes in the environment that have a negative impact on human life and health. New business models, corresponding to the assumptions of the circular economy concept, result in the creation of new opportunities for enterprises. It is important to promote experiences and good practices in the development of the circular economy at the national level. The aim of the article is to review good practices and experiences of selected countries in the field of circular economy, along with an indication of available sources of funding. The desk research is part of the implementation of Intellectual Output 1 and 2 of the EnMind Erasmus+ Cooperation for innovation and the exchange of good practices project. The project consists in the development of a Toolkit addressed to youth workers that will allow them to support and help young people who want to start a social entrepreneurship. The presented good practices have been selected from the circular economy database in practice, and the presented case studies represent entities with a uniform scale and scope of activity.

Keywords: Circular economy**,** Enterprise management, Good practice, EnMind**,** Social entrepreneurship.

Introduction

The review of the world literature allows to state that the definitions of the circular economy (circular economy) presented in it take into account the evolution of its creation and implementation. The idea of circular economy appeared in the 1960s, and one of the authors wrote about the concept of the "Earth spacecraft" as one space, without unlimited resources. Consequently, all outputs from the system are inputs, subject to continuous recycling, and the level of "inventory for processing" depends on technological development (Boulding 1966).

The concept of circular economy presented above partially refers to the concept presented in The Closing Circle (Commoner 1971), which specifies the relationship between the level of technological development, the ecosystem and the economy. The role of circularity was also indicated in 6 important areas: energy resources (including electrochemical and water), metals (including coking coal), non-metallic resources, forest biomass, agricultural resources and flora and fauna resources (Komar 1975).

Many publications also appeared in the late 1970s after the publication of the Club of Rome Reports. They emphasized the need for changes in the global economy due to the depletion of natural resources (Kulczycka, 2018).

The concept of circular economy in the 1980s was presented as a closed-loop economy by Stahel and Reday-Mulvey (1981), who emphasized not only the necessity of recycling in the economy, but also the reuse and regeneration of products. Stahel (1982) introduced methods of replacing products with services that enable "closing loops" by extending their life cycle and preventing waste. Turner and Pearce (1990) took up the subject and described the interactions and benefits between environmental protection and the economy obtained by closing the loops. The idea of industrial ecology has also developed, making it possible to use waste as input into production processes and to promote recycling. In China, as early as 2002, circular economy was introduced to the national policy as the idea of respecting the environment, and not an environmental management system.

As a result, China in 2005, in the face of limited resources and high energy consumption, implemented a new national strategy for the circular economy. Its goal was to achieve high-quality resources and energy efficiency through "reduction, reuse and recycling" (Yuan et al. 2006; Zhang et al. 2009). Circular economy as a development strategy was defined in 2011 (Hislop and Hill 2011). Since 2012, it is a system that is to be restored and regenerated (Ellen MacArthur Foundation 2012). The premises of the circular economy concept appeared in the EU policy and strategy already in the 6th Environment Action Program (Decision No 1600/2002 / EC of July 22, 2002 establishing the sixth Community environmental action program).

In Europe, the implementation of circular economy principles was introduced into the EU policy and strategy in 2014, clearly indicating that the economic model should be adapted to the economies of the Member States. The result is the adoption of the following definition of the circular economy (COM (2014) 398, 2014): a circular economy is one that allows to keep the added value of products as long as possible and eliminate waste. In 2015 it was extended and is now (COM, 2015) 614): a circular economy is one where the value of products, materials and resources in the economy is

maintained for as long as possible and the generation of waste is limited to minimum.

The aim of the article is to review good practices and experiences of selected countries in the field of circular economy, along with an indication of available sources of funding. This research will be the base for the further implementation of the EnMind project (INBIE, 2021). The project consists in the development of a Toolkit addressed to the youth workers that will allow them to support and help other young people who want to start a social entrepreneurship.

In addition, to increase the impact at European level The EnMind partners will implement MOOCs on Social Entrepreneurship. The MOOCs will be available on our EnMind Platform (Erasmus+, 2020). The research work is theoretical and analytical. Research methods typical of this type of studies were used: critical analysis of the literature on the subject, analysis of documents, analysis of published secondary data. The presented good practices represent entities of various scale and scope of activity.

Good practices in the field of circular economy

1. BASF's Circular Economy Program

BASF has launched a new circular economy program. By 2030, we intend to double our sales generated by circular economy solutions to EUR 17 billion. To achieve this, BASF focuses on three business areas: circular raw materials, new material cycles and new business models (BASF, 2021). One of the pillars of the circular economy are renewable raw materials sourced from sustainable sources.

There is a constant search for new renewable resources, such as vegetable ones, that could replace non-renewable resources. In addition, it is important to obtain them in a sustainable manner, including by building new, sustainable supply chains. BASF researchers, for customers in the cosmetics industry, are always looking for interesting active ingredients in nature - for example, in the bark of plants, leaves, roots, seeds and fruit.

They analyze thousands of samples every year. This is how they discovered the substances contained in rambutan (Nephelium lappaceum) - a tree closely related to lychee. BASF scientists have established that the aqueous extract of the leaves of this tree activates various genes in human skin and supports the production of collagen. In addition, the active ingredients from the peel and seeds of the rambutan fruit have a beneficial effect of better moisturizing the skin and stimulating the hair roots. BASF has found a way to use not only the juicy fruit, but also the peel, leaves and grains, so that no part of the plant is wasted.

In the pursuit of the sustainable sourcing of cosmetic ingredients, BASF has created the Rambutan Program. She built a socially and environmentally responsible supply chain in cooperation with local partners from Vietnam, and launched a cultivation in the first two organic rambutan gardens in Vietnam. This program allows workers to earn above-average incomes, offers them health insurance and provides safer working conditions. As a result, the superfruit of rambutan benefits not only consumers, but also workers and local wildlife (gozwpraktyce.pl).

2. The use of secondary raw materials for the production of polyethylene terephthalate (PET) packaging

KGL has developed food contact packaging made of PET up to 100% recycled.

As part of good practice, food contact packaging made of PET, up to 100% from recyclates, has been developed. The proposed solution makes it possible to solve an important environmental problem in the field of plastic waste management and is in line with the assumptions of the EU policy on reducing the amount of waste landfilling through reuse. Obtaining a pre-prepared PET flake from recyclers allows to reduce the amount of residual waste, which is a key feature of the product and technology under development, which distinguishes it from other product solutions available on the market.

The specialized tower owned by KGL enables the decontamination (cleaning) process to be carried out, thanks to which it is possible to increase the share of recycled raw materials in current production. The decontaminated raw material may come into contact with food because, compared to other recyclates, it meets the applicable quality standards (gozwpraktyce.pl).

Thanks to this, we create truly useful packaging in 100%. from recycled plastics. Additionally, the installation enables the improvement of the processing and usable properties of PET recyclates by increasing the viscosity by solid state polycondensation (SSP process).

3. Żabka network

The Żabka retail chain sells beverages in plastic packages. Today, recycling of disposable bottles is relatively low. The Żabka chain encourages customers to collect plastic bottles and give a second life to packaging, implementing solutions in line with the principles of a circular economy for their own brand.

The campaign is currently conducted in 30 stores in Warsaw. In these establishments there are special baskets, into which Varsovians can throw the drinks packages they bring when shopping. The raw material collected in Żabka stores is sent to the Lekaro sorting plant. From Lekaro, it is transported to the PET Recycling Team plant in Radomsko, which belongs to the ALPLA group. There, it is processed into granules, from which ALPLA, a producer of plastic packaging, produces bottle preforms in one of its factories in Poland. Then the

preforms are delivered to the producer of mineral water OD NOWA, i.e. Cechini.

The collected packaging produces bottles that have a carbon footprint of 33% lower than that of traditional packaging. The system allows to give a second life for a recyclable package. Additionally, Żabka Polska established a strategic partnership with Żywiec Zdrój and declared joint actions to close the circulation of plastics.

Companies have started testing EKOmat - i.e. vending machines specially designed for them, enabling selective collection of plastic and metal beverage packaging. The first devices were installed in 2020 at selected Żabka stores in Poznań and Warsaw. EKOmaty allows for more effective recycling of PET bottles, as well as for building good, pro-environmental habits (gozwpraktyce.pl).

4. Danone's Lemon Aid

Lemon Aide is a social enterprise, founded by Danone with the financial support of the Danone Ecosystem Fund, the FACE foundation (Fondation Agir Contre l'Exclusion) and the Lemontri startup. Launched in 2015, the project is a response to the enormous challenge of high unemployment and low levels of PET bottle recycling.

Danone has identified problems in France: half of the bottles used have not been recycled and the unemployment rate has hit an alarming record. Addressing both problems at the same time, in cooperation with Danone Ecosystem Fund, Danone Eaux France and its partner Foundation Act Against Exclusion and the start-up Lemon Tri, the Lemon Aide initiative was created, introducing an inclusive and environmentally friendly business model.

The project develops the idea of an alternative collection network for PET and other recyclable materials. In public spaces and large-format stores, vending machines have been installed to collect bottles for recycling and in return issue a coupon. The inclusion of the unemployed took place by enabling them to undergo training in skills related to the recycling industry (for example, machine maintenance or truck driving). They were involved in the collection of raw materials from the machines, their cleaning and transportation to the Lemon Tri warehouse. By developing an alternative way of separate collection of materials that takes place outside the home, the project created jobs with available support, training and mentoring. Additionally, Danone was able to reuse high-quality rPET raw material in the production (gozwpraktyce.pl).

Circular economy financing mechanisms - InvestEU Fund

The InvestEU Fund should contribute to increasing the Union's competitiveness and socio-economic convergence, including in the areas of innovation, digitization, resource efficiency in line with the principles of the circular economy, more sustainable and inclusive Union economic growth and social resilience, and the integration of EU capital markets, including the introduction of solutions correcting their fragmentation and diversifying the sources of financing for EU enterprises.

To that end, the InvestEU Fund should support projects that are technically feasible and economically viable by providing a framework for the use of debt, risk-sharing and equity instruments based on a Union budget guarantee and, where appropriate, on financial contributions from implementing partners. The InvestEU Fund should be demand-driven while seeking to deliver strategic, long-term benefits in key Union policies that would not be or would be under-financed, and thus contribute to the achievement of Union policy objectives. Support from the Fund should cover a wide range of sectors and regions while avoiding excessive sectoral or geographic concentration (eur-lex.europa.eu).

The InvestEU program aims to mobilize both private and public funds for investments of strategic importance to the economy. The program includes repayable support (including loans, guarantees or redemption of long-term bonds) and the InvestEU Advisory Center - substantive support for potential investment promoters and the InvestEU Portal - allows project promoters to search for investors.

Financial InvestUE can be a good complement to the support that will be provided by EU subsidies and funds from the National Reconstruction Plan. The program also provides a dedicated repayable support mechanism for projects in Just Transition regions.

The InvestEU Fund is a returnable instrument, among others loans, guarantees or redemption of long-term bonds. Support from the Fund is to mobilize both private and public funds for investments of strategic importance for the economy. In addition to the Fund, the InvestEU Program also includes the InvestEU Advisory Hub and the InvestEU Portal. The Center provides substantive support for potential investment promoters, and the Portal allows project promoters to search for investors. Repayable instruments from the InvestEU Fund may constitute an attractive supplement for financing investments in Poland applying for support under the National Reconstruction Plan or the Cohesion Policy. The InvestEU Fund is an instrument available for private and public investments as well as those implemented in the public-private partnership model. Investments that can apply for support from the InvestEU Fund must fit into at least 1 of 4 segments (Regulation (EU) 2021/523):

- Sustainable infrastructure (transport, energy, digital connectivity, waste);
- Research, innovation and digitization (transfer of research results, implementation of innovative solutions,

supporting the development of innovative enterprises);
- SMEs (preferential repayable financing for SMEs and small mid-caps);
- Social investment and skills (education, training, social infrastructure, social innovation, healthcare and long-term care).

Conclusions

The development strategy adopted unanimously by all UN countries assumes the implementation of 17 Sustainable Development Goals by 2030 in the world. One of them is Objective 12. Responsible consumption and production, defined in accordance with the principles of circular economy.

Other Goals included in the Agenda, concerning, inter alia, the development of innovation, counteracting a climate catastrophe or water and soil pollution are also part of efforts to introduce a circular economy (Gródek-Szostak, et al. 2020). Circular economy is also one of the main directions of strategic thinking about the development of the European Union economy since the announcement by the European Commission of the action plan for the circular economy in 2015. Since then, the Commission has issued a number of directives on its individual aspects, and in 2020 published a new one, an even more ambitious action plan for circular economy. It is part of the European Green Deal and efforts to achieve climate neutrality and resource efficiency by 2050. In 2019, the Polish government adopted the Roadmap for transformation towards a circular economy, in line with these measures.

The subject matter discussed in the article and the deliberations conducted are subject to limitations. The analytical database of good practices presents only exemplary CE solutions submitted by the entities, so the choice of case studies was limited. In subsequent studies carried out by the authors' research laboratory, publicly available good CE practices will be subjected to multi-criteria analytics.

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