Circular law as a legal basis for a circular economy

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Abstract. The article is devoted to the study of the legal basis for the development of the circular economy, clarifying the essence of the concept of circular law, and analysis of international and national legal acts in this area. Research has shown humanity’s awareness of modern global threats and its gradual movement from the traditional to circular economic model. The legal basis for such a transition lies in circular law, which is a set of legal norms that define and regulate social relations in the field of circular economy. The article explores legal acts in the field of circular economy at the universal, regional and national levels across the globe. The main purpose of the article is to analyze the legal basis for the development of the circular economy. International law is currently being enriched with a number of new legal acts devoted to this subject matter. This may indicate the emergence of a new branch of international law – a circular law. An increased attention of international financial institutions towards financing of circular projects stipulates the further development and spread of the circular concept.

1. Introduction
In today's environment of limited resources, increased consumption and catastrophic pollution, more and more national and international subjects of law are realizing the need to move to a circular economic model that supports sustainable economic development without harming the environment. At the international and national levels of various countries, legal acts are adopted that declare or confirm the pursuit of states of a circular economic model and new rules of production, consumption, and processing of products. This whole array of legal acts is a circular law, which is a future alternative to traditional law and includes the rules of national and international law that govern national and international economic relations, which are based on a circular economic model. Among the universal international treaties of recent years, the following are worth noting: 2030 Agenda for Sustainable Development, the Paris Agreement on Climate Change 2015. Among the regional treaties: The European Strategy on Plastics 2018, European Green Deal 2019, Circular Economy Action Plan 2020, among the national circular laws the most comprehensive are the acts of the Netherlands, Finland, Great Britain, Germany. Modern international and national financial institutions are increasing investments in circular projects. E.g.: UNIDO, the World Bank, the European Investment Bank, the European Fund for Strategic Investments, national organizations, foundations, government agencies, which indicates the further development and spreading of the circular concept and environmental thinking among all the nations of the world.
2. Methods
The analysis is based on sources of the international economics and law, on research by other scientists and practitioners in the field of international law, economics and sustainable development. The article uses general scientific methods such as: observations, analysis and synthesis, simulations, system structural, formal logical, historical methods, and etc. The information base for the study was acts of international organizations, acts of the EU and domestic acts of different countries, international normative legal acts, analysis of Google Scholar, Semantic scholar, Web of Science, Scopus, E-library databases.

3. Results

3.1. The formation of a global circular economy as an objective necessity for the development of mankind
In 2015 the UN approved The 2030 Agenda for Sustainable Development. It is a plan of action for humanity for the years to come. It is based on 17 sustainable development goals that call for action in a global partnership. In particular, it is stated that economic development must not have a negative impact on the environment and should take place concurrently with the development of solutions to challenges presented by climate change and ensuring the preservation of the environment [1].

The twelfth goal of the UN is responsible consumption and production. The world community strives to ensure sustainable consumption and production patterns. For the agenda of sustainable development to become a reality, all countries in the world must act together and in harmony [1]. An alternative model to the consumption economy is the economic model of the circular economy. Circular economy model supports sustainable economic development without damaging the environment (Figure 1).

Circular economy is understood as an economic activity aimed at energy saving, environmentally friendly production and rational consumption. According to research conducted by Julian Kirchherr, Denise Reike and Marko Hekkert, most authors use a combination of three “Rs”: Reduce + Reuse + Recycle, meaning the optimization of the production process, reuse or sharing of the product and waste recycling [2]. The importance of waste-free consumption is increasingly recognized by mankind. This topic is progressively raised at the international meetings of politicians, businessmen, scientists, and representatives of non-governmental organizations.

In our opinion, the current efforts of individual states and non-governmental organizations in reduction of household waste and litter, combating air, groundwater, and sea water pollution, etc. are not sufficient. There must be a comprehensive and single approach of all peoples and nations regarding this matter. Within the modern paradigm of socio-economic development followed by the majority countries across the globe, all the efforts to reduce the negative humans’ impact on the environment will be in vain as the
essence of social relations stays unchanged. Only by changing the economic paradigm of civilizational development, the future of mankind can be changed for the better. In this context, it is critical to move towards a global circular economic model that would form a common basis for the coexistence of all countries. The circular economy is a new economic model in which a considerable emphasis is placed on the reuse of materials, creation of added value through services and creative solutions. The circular economy implies that the value chain is organized in such a way that the outputs of one chain become inputs to another, thus, reducing dependence on new types of raw materials [3]. According to experts estimates the circular economy market makes up more than a trillion US dollars [3].

There are different economic systems in the world. In particular, some leading countries, like China and the US follow diametrically opposed types of economies, i.e.: socialist in China and capitalist in the United States. However, despite significant differences and the current global challenges both China and the United States, being the world’s largest emitters of greenhouse gases and consumers of resources, have recognized the potential of a circular economy. Thus, China adopted the Law on Encouraging the Circular Economy in 2009 [4]. The United States does not have a nationally defined strategy for the transition to a circular economy, however, the law of a number of states contains such legal norms. For example, in New York, a law was passed in 2013 banning the use of disposable polystyrene packaging for food and beverages in restaurants and grocery stores, while Colorado adopted the “Green Building and Green Points” program, which requires the recycling of at least half of construction waste [4].

Many businesses have also been involved in transforming the business model. Thus, 44% of the companies out of the first hundred, listed in Fortune Global 500 have chosen a strategy of circular economy [5]. Among the leaders in the transition to the circular model are the FMCG sector, and the automotive industry, while the oil industry, financial services and healthcare sectors are not practicing closed cycle so widely [6]. The transition to a circular economic model reduces the cost of raw materials, opens new markets, improves dialogue with customers, increases their loyalty, develops new products, creates competitive business models, improves brand reputation, etc. It can be argued that the circular economy is a full-fledged alternative to the traditional economy and is a necessary basis for the development of humankind in the future.

### 3.2. Legal bases of development of the circular economic concept

The circular economy is governed by the norms of international law and national law of different countries across the globe (Figure 2).

![Figure 2](image_url)

**Figure 2.** Elements of legal regulation of a circular economy.
Despite the UN’s identification the problem of sustainable consumption and production as one of the
greatest concerns of our times, as of today, within the sources of international law, only few documents
and individual clauses of certain agreements and conventions are devoted to environmental and other
topical issues of the circular economy.

Among the documents, adopted by the UN in the last 20 years, that contain such norms, the following
are worth noting: the Paris Agreement on Climate Change 2015, the International Tropical Timber
Agreement 2006, the Protocol on Strategic Environmental Assessment to the Convention on
Environmental Impact Assessment in a Transboundary Context, and other protocols, the Stockholm
Convention on Persistent Organic Pollutants 2001, the Cartagena Protocol on Biosafety to the 2000
Convention on Biological Diversity, and some others.

At the national legal level, various countries around the world are somewhat more actively developing
the concept of the circular economy and its legal confirmation.

Germany, Great Britain, Finland, Denmark, Scotland and other European countries are actively
modernizing their legislation to promote a circular economy. Thus, in Germany in 2012 the Circular
Economy Act was adopted.

In 2015 [7] The EU adopted a Package of Measures on the Circular Economy aimed at better
management of resources throughout the whole life cycle. According to legislators, this will not only
reduce the pressure on the environment and increase the security of supply of raw materials, but also can
bring significant economic benefits in the future.

In 2016 in Finland, A Roadmap to a Circular Economy 2016-2025 was released. The following 2017
year, the World Circular Economy Forum took place in Helsinki, which was dedicated to the world’s best
solutions in the field of circular economy [8].

In the Netherlands in 2017 the Government-wide Programme for a Circular Dutch Economy by 2050
was adopted. The same 2017, the United Kingdom launched A Business Standard for Circular Economy
BS 8001.

To date, most EU countries have adopted similar regulations in the field of circular economy.

At the regional level, in 2018 the European Strategy for Plastics was adopted, which restricts and
prohibits the use of certain plastic products. According to which, such items as earpicks, plastic utensils,
plastic straws are prohibited, and the use of plastic bags, bottles, cigarettes, and hygiene products is
limited. In 2019 The European Commission adopted the European Green Deal for the period up to 2050,
which envisages European ecological neutrality and climate law, as well as standards for CO2 emissions,
industrial strategy for the circular economy, proposals for waste disposal and sustainable development in a
circular economy, proposals for energy taxation, etc. [7].

Despite the commonality of the EU environmental policy, each country has its national contexts
regarding concept delivery/implementation. In particular, Germany, having a strong industrial economy,
formed the basis for a circular economy through material flows and availability of materials, while the
Netherlands rooted it in innovations in materials and business models. Finland is the first country in the
world to develop a national roadmap for the transition to a circular economy. Scotland became the first
country to join the Circular Economy 100 programme (CE100), an initiative by the Ellen McArthur
Foundation to foster collaboration and innovation to promote circular economy. Large EU countries, such
as Germany, the United Kingdom and France, have achieved higher rates of investments, patents and jobs
in circular sectors of the economy, which allows them to take a leading position in assessing the
development of a circular economy [8].

On March 11, 2020, the European Commission adopted the Circular Economy Action Plan. It is an
important part of the European Green Deal’s agenda. The aim of the Plan is to reduce consumption and
double the reuse of resources in the EU in the coming decades, while contributing to economic growth.
The measures, developed for Plan’s implementation, may increase the EU’s GDP by an additional 0.5% by 2030 and create approximately 700,000 new workplaces [9].

Along with the development of the idea of a circular economy and its enshrinement in legal norms of European states, such countries as Japan, Canada, the United States, and Australia have also adopted relevant national circular laws within national legislative systems.

In 2020, the International Renaissance Foundation in Ukraine explored opportunities for Ukraine within the Circular Economy Action Plan, which provided a brief overview of the EU Circular Economy Action Plan, energy and climate issues, stakeholder positions, the situation in Ukraine and developed respective recommendations [10]. In general, Ukraine’s prospects were assessed as satisfactory.

3.3. Circular economy and circular law
Circular law is a set of legal norms that define and regulate social relations in the field of circular economy.

Based on the fact that both the national economies of states and the global economy tend to shift from traditional to circular, so the law, both national and international, will be changing its face too, becoming circular (at the national and international levels) (Figure 3).

![Figure 3. The process of forming and evolution law norms for the regulation of a circular economy.](image)

International circular law will regulate the global circular economy, i.e.: the norms adopted at the international level which, in addition to traditional aspects of regulation, determine the procedure, terms and peculiar features of production of goods and services, their utilization or application with the maximum effect possible, as well as waste management for recycling or up to the state of environmentally friendly substance.

It is expedient to define international circular law as a branch of international public law that regulates circular international economic relations and relations in the field of ecology and environmental management. That is, in the majority of states around the globe, traditional international economic law, being in the state of transition to a circular model, is transforming into a circular economic law. Thus, a circular economic law is based on the principles of the circular economy and as such, covering greater areas of regulation.

With the spread and development of the circular economic concept in the world, modern international economic organizations are becoming involved in financing and providing technical support to circular projects, which indicates the widespread recognition and encouragement of the circular economy around the globe.

The European Investment Bank (EIB) is one of the largest investors in circular economy projects. The EIB provides advisory support by assessing the possibilities of financing a specific circular project by a bank and identifying the best lending terms. Projects that are too small to be handled as stand-alone investment loans can be supported through intermediary loans.
Another major investor is the European Fund for Strategic Investments (EFSI), which ensures investments in research, development, and innovation, as well as supports small and medium-sized businesses.

Within the framework of “InnovFin - EU Finance for Innovators”, high-risk projects are financed, provided that technological innovations are available in the circular project. All EU programs are complemented by investments at the national level through various instruments granted by national, regional and/or local development agencies (e.g., Tekes in Finland, Invitalia in Italy, the Dutch Enterprise Agency in the Netherlands, Innovate UK in the UK, etc.) [11].

UNIDO funds energy saving and resource efficiency projects in various countries around the world, including Ukraine.

The World Bank has been holding an annual global conference on climate finance, climate investment and climate markets since 2017. It aims to bring together opinion shapers interested in matching climate innovations to investment opportunities - turning dialogue into action. The conference aims to promote knowledge sharing and demonstrate knowledge and know-how in creating low-carbon sustainable solutions [12].

In Ukraine, a new investment program “Steel Billion” has been operating since 2021. It is dedicated to reducing the impact of production on the environment, sustainable development of the enterprise and implementation of the principles of circular economy, namely: frugal and reusable management of resources and recycling. ArcelorMittal invests about $ 1 billion in eco-modernization projects in Ukraine [13].

The change in attitudes toward environmental issues in Ukraine and its obligations to foreign partners are reflected in the legal field as well. In particular, it is proposed to adopt a new Law “On Waste Management” [14]. The draft Law 2207-1-d “On Waste Management” is based on three EU directives: the polluter pays, extended producer responsibility and the waste management hierarchy, where waste disposal is the last-resort solution if recycling is impossible [14]. The mechanism of the law will stimulate the development of the processing industry in the country.

Ukraine and its entrepreneurs are increasingly involved in solving the problem of plastic pollution. For example, the Morshynska brand has updated the packaging design, reducing the amount of plastic used by 15% [15].

However, in Ukraine, as in many other countries across the globe, there is still no clearly defined and enshrined in law a notion of a circular economy or a circular economic concept, as well as a state-recognized strategy for the transition to a circular economic model.

4. Conclusions

The formation of a global circular economy is an objective necessity for human development, which was identified both at the international level of the UN in the 2030 Agenda for Sustainable Development, and in the national acts of various countries. Circular economy is understood as an economic activity aimed at energy saving, environmentally friendly clean production and rational consumption. China, Germany, Great Britain, Finland, Denmark, and Scotland have already adopted a number of circular legal acts, while other countries are actively modernizing their legislation towards a circular economy. Ukraine is also gradually developing its legal norms in this area and is paying more and more attention to environmental issues.

Nowadays international economic organizations are being actively involved in financing and providing technical support to circular projects within the framework of global trends and enacted legal norms. Thus, it is expedient to define international circular law as a branch of international public law that regulates circular international economic relations and relations in the field of environment and nature management.
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