



THEORETICAL ASPECTS OF FORMATION AND DEVELOPMENT OF THE CIRCULAR ECONOMY IN UZBEKISTAN

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ABSTRACT	KEY WORDS
The constant growth of the population and the increasing demand for resources, coupled with shortages of food, raw materials, and habitat, highlight the urgent need to study both Uzbek and foreign experience to find solutions to these problems. Environmental pollution, the ongoing trend of increasing carbon dioxide and other greenhouse gas emissions leading to climate change, exacerbate the previously noted problems. The paper considers and analyzes the main features and aspects of the circular economy concept, which is replacing the conventional linear economic development model.	Sustainable development, circular economy, linear economic model, resources, waste, environment, effect.

Introduction

Currently, the global economy is largely characterized by a linear resource consumption model. This model relies on the excessive exploitation of natural resources, often for a very short period, in contradiction to the principles of sustainable development, before returning them to the environment as waste. Such a system of using resources, which are available in limited quantities on the planet, is not sustainable in the long term.

The economy of any country depends on uninterrupted access to natural resources and materials, with a significant proportion of these materials often imported. This dependence can become an increasing source of vulnerability, as growing global competition for natural resources has already contributed to a significant increase in prices and can cause disruptions in sectors reliant on these resources. At the same time, the rapid growth in the extraction and exploitation of natural resources leads to a wide range of negative environmental consequences.

Air, water, and soil pollution, acidification of ecosystems, loss of biodiversity, climate change, and waste generation threaten economic and social well-being both in the present and in the medium and long term.

Not only waste reduction, but also new approaches to production, distribution, and consumption—the circular economy can help save resources and protect the environment.

Sustainable resource use and the fight against climate change are becoming an objective necessity, shaping a new type of thinking and behavior and, accordingly, defining trends for business. The circular economy is one such trend.

MAIN PART

The circular economy is a model of production and consumption that involves reusing, repurposing, and recycling existing materials and products for as long as possible. It's also known as a cyclical economy or a "closed-loop economy."

The traditional economy is based on a "take-make-dispose" model, relying on the production of large quantities of readily available materials and energy. In contrast, the core principle of the circular economy is to minimize waste generation, emphasizing the renewability of resources and aiming to restore the environment.

Developing a circular economy can help solve many existing problems. Improving resource efficiency leads to economic benefits by reducing costs and risks while simultaneously increasing competitiveness.

The circular economy is a model inspired by closed material cycles in nature, aiming to maximize the preservation of the value of products and the raw materials they contain at the end of their use. The transition to a circular economy offers benefits in four areas: resource use, the environment, the economy, and social aspects, particularly job creation. However, this transformation will inevitably require significant changes and will incur costs and expenses.

The transition to a circular economy is one of today's most important tasks and a key driver of global development.

Sustainable development is a key economic driver that has been actively gaining momentum in recent years, both globally and in Uzbekistan. The Sustainable Development Goals (SDGs) formulated by the UN are largely implemented through the principles of ESG (Environmental, Social, and Corporate Governance), which are increasingly adopted as strategies by large enterprises.

The principles of the circular economy encompass all spheres of activity. Therefore, cooperation between enterprises and international agreements, which create significant opportunities for new markets and partnerships, cannot be underestimated. Successful commercial collaboration is characterized by industrial symbiosis, aiming for a closed production cycle where waste, residual heat, and other by-products from one enterprise are used by another.

A key area for applying circular economy principles is within industrial complexes, which are a major aspect of economic development in most countries. This includes large multinational companies and corporations. Industrial complexes must, of course, be considered when implementing circular economy principles. The circular economy is being applied in many areas of modern industrial complexes, including the automotive industry, the production of chemical and medical equipment, pharmaceuticals, and more [1].

For Uzbekistan, the circular economy is a way to address development challenges and achieve national and sectoral strategic goals for greening the economy. It represents a comprehensive set of systemic solutions to global problems related to climate change, biodiversity loss, waste, and environmental pollution.

The circular economy is based on three fundamental principles: eliminating waste and pollution, circulating products and materials (at their highest value), and regenerating natural systems. These principles are supported by a transition to renewable energy sources and materials.

In Uzbekistan, 14 million tons of waste are generated annually, but only 4–5% of this is processed [2]. Currently, most of the waste generated in Uzbekistan is sent to landfills without being processed. As a result, over 7 million tons of greenhouse gases are released into the atmosphere annually, and 43,000 tons of toxic substances seep into the ground. This worsens the environmental situation, leading to air and soil pollution. Waste recycling has a positive impact on the environment and brings economic benefits.

Uzbekistan's commitment to developing a circular economy is further confirmed by the recently adopted Presidential Decree No. UP-149 of September 26, 2024, "On measures to ensure transparency and further improvement of the management system in the fields of ecology and environmental protection."

The Decree stipulates:

- Beginning January 1, 2026, the tender process for contracting waste management services to businesses will be tracked online.
- Sanitary cleaning enterprises will install video surveillance cameras at waste collection points, allowing residents to monitor operations at these locations.
- Sanitary cleaning enterprises will be required to install online GPS tracking systems on all specialized waste transportation equipment, and to cover the associated monthly expenses.
- A "Call Center" will be established to provide complete information about sanitary cleaning enterprises, receive complaints about the quality and scope of services provided, and facilitate feedback to the enterprises.
- Reliable information will be provided about the geographical boundaries of the territories served by each sanitary cleaning enterprise, as well as the locations of waste collection points serving residents and legal entities.
- Subscribers will be provided with information about waste removal schedules.

Furthermore, according to the Decree:

- Research and technological development efforts aimed at incorporating waste into the economic cycle are being developed.
- Environmental certification of waste is being implemented.
- Training and professional development for specialists in waste management are being provided.
- Sanitary and hygienic requirements are being established for waste management facilities and products manufactured from waste.
- Supervision will be conducted to ensure the safe execution of activities related to radioactive waste, including accounting, storage, transportation, processing, and disposal, based on sanitary rules, norms, and hygienic standards.
- Public oversight of solid household and construction waste management will be implemented.

In addition, the Decree establishes the Agency for Waste Management and Development of the Circular Economy, based on the Republican Center for the Organization of Sanitary Cleaning Works, to act as a liaison between the public and sanitary cleaning enterprises on waste management issues. The Agency will perform the following tasks:

- Ensure the seamless operation of a unified electronic system for payment and accounting of mandatory fees for the removal of solid household waste from individuals and legal entities.
- Introduce modern methods to improve waste management, processing, and disposal, and implement the “zero waste” principle.
- Develop and organize the implementation of measures to develop a circular economy by establishing the production of energy resources, raw materials, and materials through waste sorting and processing.
- Take measures to create eco-industrial zones on the territory of landfills for the collection, sorting, neutralization, processing, incineration, utilization, and disposal of waste.
- Attract loans, grants, and direct investment from international financial institutions and foreign governmental financial organizations in the field of waste management.
- Introduce modern information and communication technologies into the waste removal industry.
- Monitor the activities of enterprises engaged in sanitary cleaning of solid household waste and business entities, address problems and shortcomings, and assess performance indicators.

This Decree, in accordance with Article 49 of the Constitution of the Republic of Uzbekistan, provides for the creation of optimal conditions and mechanisms to realize citizens’ right to a favorable environment and access to reliable information about its state, as well as the implementation of a unified state policy in reforming the waste management system and in waste management in the republic, and the organization of a system to coordinate the activities of service organizations.

To promote the circular economy in Uzbekistan, and with financial support from the Korea Green Growth Trust Fund (KGGTF), the World Bank has been implementing a targeted Technical Assistance (TA) program in the country since March 2020. This program includes analytical studies, capacity building activities, and knowledge exchange to promote the circular economy as a pathway to a “green” economy. This TA program focuses on the “agriculture-food” value chain, aiming for an in-depth assessment of measures to improve natural resource efficiency, reduce agricultural and food waste, pollution, and greenhouse gas emissions. Currently, work is underway with government agencies on an action plan for implementing circular economy principles within the agro-food value chain [4].

CONCLUSION

The circular economy offers an excellent way to transform environmental challenges into economic opportunities, benefiting the environment, consumers, businesses, and the state.

An analysis of official documents related to the development of the circular economy highlights the following priorities: for developed countries – changing the structure of production and consumption, fostering competition, and creating jobs; for developing countries – achieving sustainable development and addressing poverty.

In practice, transitioning to a circular economy is a lengthy and complex process. According to The Circularity Gap Report, presented annually at the World Economic Forum in Davos, only 9% of materials in the global economy are currently reused.

In Uzbekistan, the circular economy is being consistently strengthened. The Presidential Decree of the Republic of Uzbekistan established the Agency for Waste Management and Development of the Circular Economy to drive this forward.

The Agency will focus on implementing modern methods for collecting, sorting, neutralizing, processing, incinerating, utilizing, and disposing of waste. By developing a circular economy, Uzbekistan aims to stabilize its environmental situation, improve sanitation, and reduce the incidence

of dangerous diseases among the population. Waste will be used to generate alternative energy, raw materials, and organic fertilizers. Eco-industrial zones will be created on the sites of waste landfills. The circular economy plays a key role in achieving sustainable development by ensuring a balance between economic growth, social equity, and environmental protection. In the face of global challenges such as climate change, depletion of natural resources, and increasing waste volumes, transitioning to a circular economy is essential to ensure environmental safety and a high quality of life for future generations.

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