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Inaugural Article

Accelerating Transition to the Circular Economy in Georgia

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The paper discusses the key principles and conditions required for an accelerated transition to the circular economy, a new economic model that represents sustainable progress towards efficient green growth and provides the framework to develop new business models aimed at increasing the value, use and life of materials, products and assets. Embracing the circularity principles can also accelerate the recovery from the economic downturn caused by COVID-19. The transition to the circular economy requires a radical change in the way we produce and consume. Products are designed for durability, upgradeability, reparability and reusability. Companies develop new business models generating revenue streams from services rather than products while making a more efficient use of resources and materials and consumers use products efficiently and discard them in such a way that they can be turned into secondary materials that can enter a new production-consumption cycle. Georgia has recently embarked on an accelerated path to the transition to the circular economy. With the concerted efforts of the Government, civil society organizations, and international partners, Georgia initiated the development of the circular economy strategy and took some important steps to include, for example the introduction of the Extended Producer Responsibility (EPR) in the national Waste Management Code. In its road to circularity Georgia should benefit from the experiences of more advanced economies and form strong partnerships such as the ongoing programmer supported by the Government of Sweden in order to choose the most optimal path to the transition to the circular economy. *© 2020 Bull. Georg. Natl. Acad. Sci.*

Circular economy, extended producer responsibility, sustainable management, production-consumption cycle

WHY WE NEED TO BECOME CIRCULAR

The circular economy concept is gaining attention in light of increasing consumption and resource use by a fast-growing population with rising standards of living. Circularity refers to the circular flow and efficient use and reuse of resources, materials and products. This is a new economic model that represents sustainable progress towards efficient green growth, moving from a consumption and disposal-based linear model to extending the life and use of products and materials and minimizing wastage. Due to its expected environmental, climate, social and economic benefits, the circular economy is not only being strongly promoted by

the European Commission and other EU institutions, as well as a growing number of EU Member States and cities, it is also attracting increasing attention from the business community and from public and private financiers. The circular economy clearly goes beyond resource efficiency and recycling and provides the framework to develop new business models aimed at increasing the value, use and life of materials, products and assets and designing out waste from production and consumption.

Circular economy strategies have been under development in European cities, regions, and countries in the last few years. 33 strategies have been adopted since 2014, and at least 29 more are under development: Circular economy strategies and roadmaps in Europe, identifying synergies and the potential for cooperation and alliance building. The Ellen MacArthur Foundation, OECD, European Commission and other notable organizations have estimated that economies could greatly benefit from circular economy strategies on economic, social and environmental dimensions [1].

Adopting the circular economy policy has a potential to put economies on the road to transformation to an economic system that uses natural resources in the most efficient way, preserves the value of materials and products by using them circularly, and reduces the negative impact of economic activities on the environment and health. Applying circular economy approaches can cut industrial emissions, reduce the production of and exposure to hazardous substances and contribute to climate change mitigation. With its truly symbiotic effects on the economy and the environment, the circular economy is a way of achieving certain UN sustainable development goals (SDGs).

HOW DO WE GO CIRCULAR

The transition to the circular economy requires a radical change in the way we produce and consume. In a circular economy, products are designed for durability, upgradeability, reparability and reusability, with a view to reusing materials from which they are made after they reach the end of their life. In the use phase, products are managed with a view to maximizing their utilization capacity and extending their useful life, thus maintaining their value for as long as possible. This is made possible by companies that develop new business models generating revenue streams from services rather than products while making a more efficient use of resources and/or giving new value to end-of-life products and materials.

Consumers use products efficiently and discard them in such a way that they can be reused or, if this is technically or economically unfeasible, recycling operators turn them into secondary materials that can enter a new production-consumption cycle. This needs to be supported by the whole system, from enabling technologies and infrastructures to a form of market organization that facilitates collaboration along and across value chains and a form of governance and regulation that encourages companies to adopt circular approaches to social norms that make circular production-consumption patterns socially preferable. This paradigm is in contrast with the linear economy which is based on the ‘take-make-use-discard’ model. This is a model which maximizes the amount of products produced and sold but does not focus on preserving materials. Such an approach prevents effective collaboration along value chains and stimulates the ‘throw-away’ consumer culture with its noxious environmental consequences.

Like with any systemic change, the transition to the circular economy requires several elements of the system to change simultaneously. The inertia and resistance of the current linear economic systems prevent the transition from occurring. Concerted actions by a host of stakeholders are needed. Government at all levels, businesses, innovators, academia, investors and consumers all have to play their distinct roles and contribute to the process.

WHAT IS GEORGIA DOING ABOUT THE CIRCULARITY

With the general objective of replacing the 'end-of-life' concept with an economic system that closes material loops, Georgia has recently embarked on an accelerated path to transition to the circular economy. With the concerted efforts of the Government, civil society organizations, academia and international partners, Georgia initiated the development of the circular economy strategy and roadmap aimed at comprehensive approach from multiple points of view including production, consumption, waste management, secondary raw materials, innovation, investments as well as ongoing initiatives, in different sectors, by different players, and at different stages of the value chain or different stages of development. Several necessary steps to promote the circularity have already been undertaken. These include, for example the introduction of the Extended Producer Responsibility (EPR) in the national Waste Management Code. The EPR is considered a key financial and operational instrument which promotes the implementation of waste management schemes in line with the waste hierarchy as laid down by the Code and the development of a resource-efficient economy. By introducing the EPR, producers will take over the responsibility for collecting or taking back used goods and for sorting and treating for their eventual recycling. The Ministry of Environmental Protection and Agriculture of Georgia, with the support from the European Union, UNDP and the Government of Sweden, has been working in this area since 2015.

WHY IS EPR SUCH AN IMPORTANT STEP AND WHAT ARE ITS KEY ELEMENTS

The EPR is an approach of the environmental policy where the producers and importers of certain products are responsible to manage the wastes generated after the use of their products, and among them to carry related costs. The purpose of the EPR is to improve environmental performance of the waste management system and to mobilize financial resources needed to ensure the reuse, separate collection, recycling, recovery and/or other treatment of waste. It is based on the "polluter pays" principle, which is the cornerstone of the environmental policy. The EPR facilitates the attraction of private investments in the waste management infrastructure and the creation of different jobs in the country. The EPR is directly linked to the green and circular economy development.

At this stage the EPR applies to the following waste products: waste from electric and electronic equipment, used oils, end-of-life tires and vehicles as well as waste batteries and accumulators.

The EPR will be gradually expanded to cover other waste products. However, the introduction of this principle is crucial for starting the practical implementation of the (ii) scope of decision authority and liabilities of involved parties; (iii) technical regulations on the collection and treatment for each category of specific waste; (iv) targets to be achieved for the gradual adoption of the EPR; (v) Control mechanisms. These technical regulations were developed through the support of EU, USAID, SIDA and UNDP, and with the involvement of international and local experts. The experience of Sweden, Germany, Austria, Greece, Bulgaria and other countries was shared. It should be mentioned that all stakeholders and especially companies directly subject to the EPR were actively engaged in this process. Large scale public hearings, sectorial meetings, workshops, discussions with individual companies and media-campaigns were conducted and contributed to the process.

The Ministry of Environmental Protection and Agriculture has also prepared several technical regulations for handling under the EPR such materials and products as waste electric and electronic equipment, waste oils, end-of-life tires, and waste batteries. These regulations are currently

going through the formal approval process and are expected to enter into force this year with the deadline for registration of producers set at the mid of the next year. The regulations stipulate the targets for 2022-2023 periods. The delay in the legislative process was caused by the COVID-19 pandemic situation. However, the Government extended the deadline to give producers ample time for registration, establishment of the EPR organizations and other preparatory works. There are other technical regulations that are currently under the preparatory and review processes. These include on packaging wastes and on end-of-life vehicles. These draft regulations will be additionally submitted to the GOG in the nearest future.

CAN GEORGIA GO CIRCULAR ON ITS OWN

No government is capable of carrying out the transition on its own. Cities and local communities play a crucial role in the transition. They are increasingly recognized as the central generators of circular change. In the process of creating the roadmap to circularity, various available resources need to be considered from guidelines found in EU documents [1] and national documents, but above all, the concrete examples are presented in the reports of the Ellen MacArthur Foundation [2] and McKinsey Centre for Business and Environment (2016) [3]. A circular economy in the Netherlands by 2050 [4], finnish road map to a circular economy, potential for Denmark as a circular economy [5], roadmaps and various other documents will allow forming criteria for the inclusion of good practices taking into account Georgian specifics, both in its natural resources, driving forces behind its economy, hubs of change and cultural models.

Georgia should benefit from the experiences of more advanced economies in the implementation of the circularity principles and learn from their successes and mistakes. This calls for forming strong partnerships in order to choose the most optimal path to the transition to the circular economy. A good example of such a partnership is the programme supported by the Government of Sweden aiming at promoting the circular economy. The ongoing programme being implemented by CSO Georgian Society of Nature Explorers "Orchis" within the framework of "Keep Georgia Tidy" Project [6] has already raised much needed awareness about the circular economy and provided recommendations to various groups of stakeholders, including policy makers, financial institutions and project promoters how to accelerate the implementation of circular economy principles at various levels of economic activity. This programme is the basis for the accelerated shift to circularity. It is also a vital contribution to fulfill Georgian commitments under the Association Agreement with the European Union. However, this shift requires actions at many levels and, therefore, there is a need for stronger partnerships and cooperation to launch a set of actions designed to provide impetus for an accelerated transition to the circular economy. These partnerships would assist Georgia in defining specific objectives based on an analysis of the existing needs, experiences and opportunities.

HOW CAN CIRCULARITY HELP IN THE CURRENT ECONOMIC DOWNTURN

The transition to a circular economy is at an early stage even in the most developed countries of the World. It is crucial for transitional economies like Georgia to take advantage to be at the forefront of development and become a regional leader in the next stage of development which has a potential to significantly accelerate the sustainability agenda. In addition, embracing the circularity can greatly contribute to the recovery from the economic downturn caused by the COVID-19 [7]. The COVID-19 crisis has shone a spotlight on the resilience of global value chains, which have become increasingly complex and globalized in recent decades.

The recovery measures proposed by governments present an opportunity to seek greater circularity in supply chains, which can act both to improve resource efficiency and resilience for businesses (by building greater resilience to supplier risks) and society (by reducing environmental risks). In circular value chains, waste is minimized and end-of-life products are recovered for reuse, remanufacture, and recycling. This is achieved through improved product design (e.g., for disassembly, remanufacturing and recycling) and increased efficiency in the use of material resources, which generates a number of benefits. The availability of recycled materials and products for reuse and remanufacture leads to new sources of supply and supports the diversification of supply chains. Circular value chains also help to advance climate mitigation via reduced primary material production and opportunities to shift consumption towards product-service and other circular business models. The Government of Georgia can catalyze the uptake of circular value chains via green public procurement, removing trade barriers on scrap, landfill fees, further advancement of the Extended Producer Responsibility, and capacity building amongst firms.

An increased use of digital technologies for supply chain management can also improve resilience and reduce the likelihood of disruptions, by providing data to identify and evaluate a number of resource efficiency risks and opportunities. On one hand, digitalization lays the foundation for disclosure of climate-related risks by companies for example through the recommendations of the Task Force on Climate-related Financial Disclosure (TCFD) [https://www.fsb-tcfd.org/]. The recovery from COVID-19 opens an opportunity for governments to require both clear actions towards alignment with environmental policy objectives, as well as disclosure of climate-related risks as conditions for financial support through recovery policies. Governments can catalyze this shift by attaching conditions on stimulus packages to increase the uptake of these technologies, as well as through targeted innovation policies.

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ცირკულარულ ეკონომიკაზე გადასვლის დაჩქარება საქართველოში

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** საქართველოს გარემოს დაცვისა და სოფლის მეურნეობის სამინისტრო*
*** გაეროს ცირკულარული ეკონომიკის მრჩეველთა საბჭო, გარემოსდაცვითი, სოციალური და მმართველობის სფეროების საერთაშორისო ექსპერტი, დიდი ბრიტანეთისა და ჩრდილოეთ ირლანდიის გაერთიანებული სამეფო*

(წარმოდგენილია აკადემიის წევრის გ. ალექსიძის მიერ)

მოცემულ სტატიაში განხილულია ცირკულარულ ეკონომიკაზე დაჩქარებული გადასვლის ძირითადი პრინციპები და ამისათვის საჭირო პირობები. ცირკულარული ეკონომიკა ახალი ეკონომიკური მოდელია, რომელსაც ეფექტიანი მწვანე განვითარებისაკენ მივყავართ და ჩარჩოს გვაძლევს ისეთი ახალი ბიზნეს მოდელების შესამუშავებლად, რომელთა მიზანია მასალების, პროდუქტებისა და აქტივების ღირებულების, მოხმარების ინტენსივობის და ექსპლუატაციის ვადის გაზრდა. ცირკულარობის პრინციპების მაქსიმალურად გამოყენებით შესაძლებელია კოვიდ-19-ით გამოწვეული ეკონომიკური ვარდნიდან გამოსვლის დაჩქარებაც. ცირკულარულ ეკონომიკაზე გადასვლა წარმოებისა და მოხმარების მეთოდების ძირფესვიან ცვლილებას მოითხოვს. პროდუქცია იმგვარად იქმნება, რომ იყოს გამძლე, შესაძლებელი იქნეს მისი განახლება, შეკეთება და ხელახლა გამოყენება. კომპანიები შეიმუშავებენ ახალ ბიზნეს მოდელებს, სადაც შემოსავლის მიღება ხდება მომსახურებიდან და არა პროდუქციიდან, ამასთან რესურსები და მასალები უფრო ეფექტიანად მოიხმარება, მომხმარებლები პროდუქტებს ეფექტიანად იყენებენ და იმგვარად იცილებენ, რომ შესაძლებელი იყოს მათი გარდაქმნა მეორად მასალებად, რომელთა გამოყენებაც წარმოება-მოხმარების ახალ ციკლშია შესაძლებელი. ახლახან საქართველო ცირკულარულ ეკონომიკაზე გადასვლის დაჩქარებულ გზას დაადგა. მთავრობის, საზოგადოებრივი ორგანიზაციების და საერთაშორისო პარტნიორების შეთანხმებული ძალისხმევით, საქართველომ ცირკულარული ეკონომიკის სტრატეგიის შემუშავება წამოიწყო და გარკვეული მნიშვნელოვანი ნაბიჯები გადადგა, როგორიცაა, მაგალითად, ნარჩენების მართვის კოდექსში მწარმოებლის გაფართოებული ვალდებულების შემოღება. ცირკულარული ეკონომიკის გზაზე საქართველომ უნდა ისარგებლოს მოწინავე ეკონომიკების გამოცდილებით და ისეთი მტკიცე პარტნიორული ურთიერთობებით, როგორიცაა შვედეთის მთავრობის მიერ მხარდაჭერილი მიმდინარე პროგრამა, რათა ცირკულარულ ეკონომიკაზე გადასვლისას ყველაზე ოპტიმალური მარშრუტი შეარჩიოს.

REFERENCES

1. Circular Economy Action Plan https://ec.europa.eu/environment/circular-economy/; The European Commission first Circular Economy Action Plan, 2015.
2. EllenMacArthurFoundation_PolicymakerToolkit.pdf; www.ellenmacarthurfoundation.org/assets/downloads/publications (2019).
3. McKinsey Centre for Business and Environment (2016) The circular economy: Moving from theory to practice. https://www.mckinsey.com/~/media/McKinsey/
4. government/documents/policy-notes/2016/09/14/a-ircular-economy-in-thenetherlands-by-2050/17037+Circulaire+ Economie_EN.PD
5. https://www.ellenmacarthurfoundation.org/assets/downloads/government/20151113_DenmarkCaseStudy.pdf
6. http://www.cleanup.ge/?lang=eng&go=consortium (in Georgian)
7. https://cities-today.com/industry/transforming-cities-into-thriving-circular-societies-five-lessons-from-covid-19/

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