UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE

BACKGROUND PAPER ON

# Measuring and monitoring the circular economy and use of data for policy-making

WITHIN THE PROJECT

***Improved environmental monitoring and assessment in support of the 2030 Sustainable Development Agenda in South-Eastern Europe, Central Asia and the Caucasus***

With financial support from the United Nations Development Account Programme (11th tranche)

**Geneva, 2021**

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UN environment programme

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# MEASURING AND MONITORING THE CIRCULAR ECONOMY AND USE OF DATA FOR POLICY-MAKING

The project *Improved environmental monitoring and assessment in support of the 2030 Sustainable Development Agenda in South- Eastern Europe, Central Asia and the Caucasus*, funded by the United Nations Development Account (UNDA), is led by the United Nations Economic Commission for Europe (UNECE) and implemented together with the United Nations Environment Programme (UNEP). The project aims to strengthen the national capacities of seven target countries: Armenia, Bosnia and Herzegovina, Georgia, Kazakhstan, Kyrgyzstan, North Macedonia, and Tajikistan. To close this project, UNECE is organizing a one-day regional event in November 2021 with the topic of measuring and monitoring the circular economy and the use of data for policymaking. This event is planned after several capacity-development activities (webinars, conferences) under the UNDA project. The implementation of the event counts with the support of the Environment Agency Austria (EAA).

This document is written by Gustavo Longaray Moraga, PhD, and is intended as a background for the Regional Conference on Circular Economy, and it is structured in three axes following the concept of the event: Science, Policy, and Statistics.

**Box 1: Objective of this report**

The aim of this report is to give a snapshot of circular economy, and how it could be measured in the target countries with the proposal of a circular economy scoreboard including quantitative indicators.

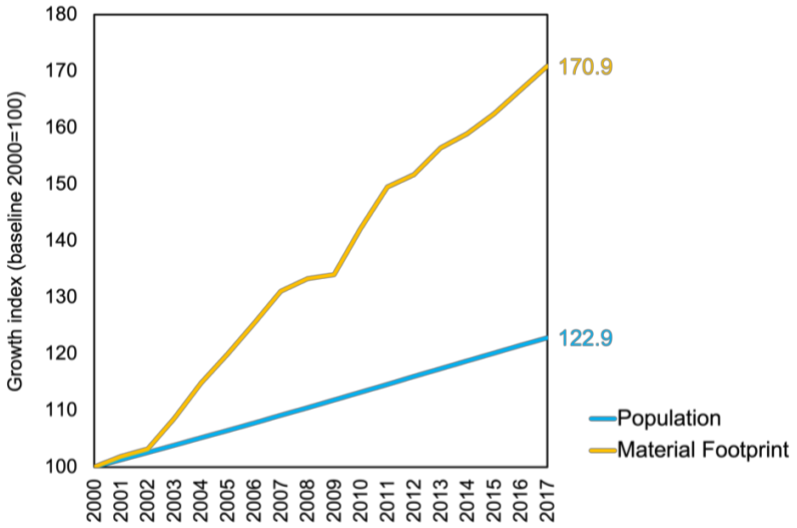
# TABLE OF CONTENTS

# Part 1: Science

## Our material use is inefficiently leading to waste generation and environmental impacts

The worldwide consumption of resources is increasing. Looking at the past trends of material footprints – the amount of raw materials extracted to meet the final consumption demands – we consumed 70% more resources in 2017 than in 2000 (Figure 1). Nonetheless, although the global population is growing, its increase was only about 20%. Therefore, the increased consumption of materials cannot be explained by a growing population only.

*Figure 1: Population and material footprint growth index, 2000-2017 (baseline 2000=100).*

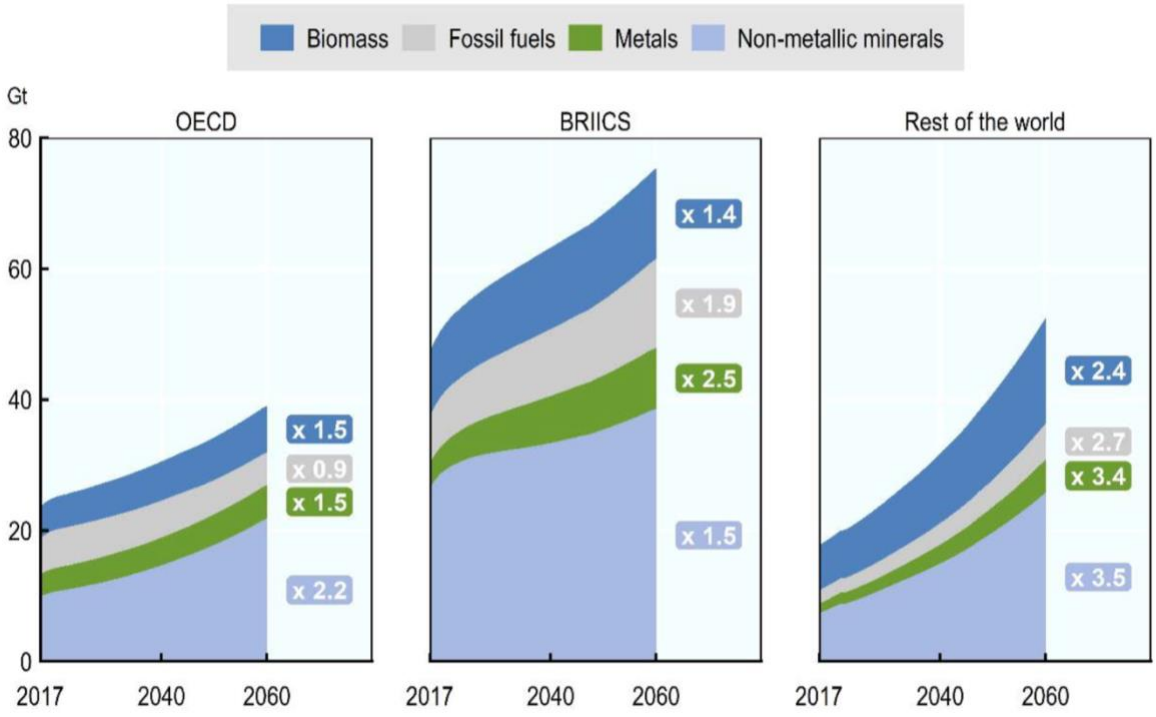



*Adapted from: United Nations (https://unstats.un.org/sdgs/report/2019/goal-12/)*

Looking at future projections, the growth rate of the global population tends to slow down. Still, the population will increase nonetheless – the current 8 billion people in 2020 is projected to be around 10 billion by 2060 [1]. In parallel, affluence or quality in living standards tends to increase with higher Gross Domestic Product (GDP) per capita in emerging and developing economies. Indeed, the global average GDP per capita is projected to triple from 2017 to 2060 [2]. By 2060, the consumption of natural resources is projected to grow to more than 160 billion metric tons [2]. This increased consumption should happen for all

regions and virtually for all resources[1] (Figure 2). This projection shows a strong link between global materials use and increased economic growth, investment, infrastructure, and construction [2].

*Figure 2: Growth in primary materials use is projected to increase in all regions in the planet*

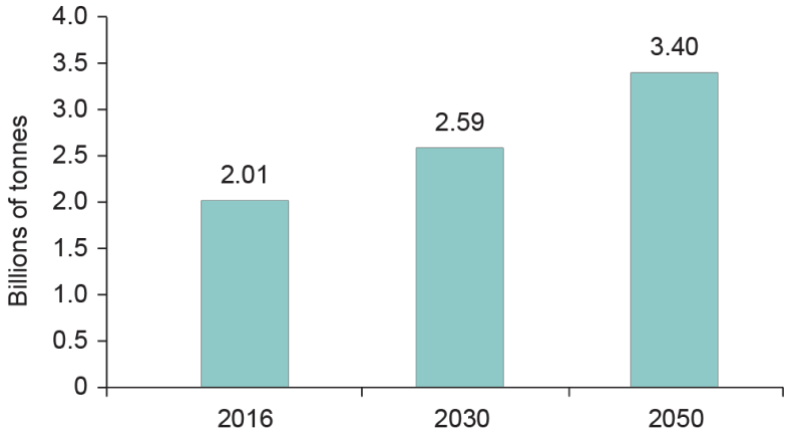



*(material use in billion metric tons)*
*BRIICS: Brazil, Russia, India, Indonesia, China and South Africa*
*Source: Organization for Economic Co-operation and Development OECD* [2]

Evidently, the need to improve prosperity in growing economies will require more natural resources. However, despite the increase in material use, we may waste more materials in the future. Indeed, growth in prosperity is linked to increased waste generation [3]. According to World Bank projections, global waste generation will grow 70% by 2050, reaching 3.4 billion metric tons (Figure 3). That is to say that if we as a society are extracting more and generating more waste, we are not efficient in using materials.

[1] The use of fossil energy carriers may slightly decrease in OECD countries.

*Figure 3: Projected and current global waste generation*




*Source: Kaza et al.* [3]

This trend of materials use and waste generation puts unprecedented pressure on climate because of potential environmental impacts. The extraction and processing of resources account for half of the global greenhouse gas emissions and 90% of global biodiversity loss and water stress impacts [4]. Drivers of these impacts are related to the fossil-fuels energy-intensive process required to extract many natural resources [5]. For this reason alone, a worldwide clean energy transition would be beneficial. Indeed, the Sustainable Development Goal (SDG) 7 intends to ensure more clean and affordable energy use. However, many minerals and metals are essential for a clean energy transition to sustainable development. The elevated extraction rate of materials may increase their depletion or scarcity, making mining even more energy-intensive.

All in all, the inefficiency of the current economic model leads to increased use of natural resources, waste generation, and environmental impacts that need to be solved. The circular economy model can contribute to a more resource-efficient and green society. In the next sections of Part 1: Science, we briefly introduce the circular economy and its benefits.

## Circular economy shows key features for the circularity of products, materials, and resources.

The circular economy is an umbrella concept that encompasses related concepts such as resource efficiency, resource productivity, sustainable material management [6]. Building on those concepts, the circular economy can propose a systematic approach to maximize

economic, social, and environmental benefits. Nonetheless, the circular economy as a policy concept is *in the making* or currently being assembled [7]. There is no agreed-upon definition of circular economy, and different stakeholders find it related to varying degrees of sustainability [8]. Although no internationally agreed definition exists, the United Nations Environmental Assembly acknowledged the circular economy as

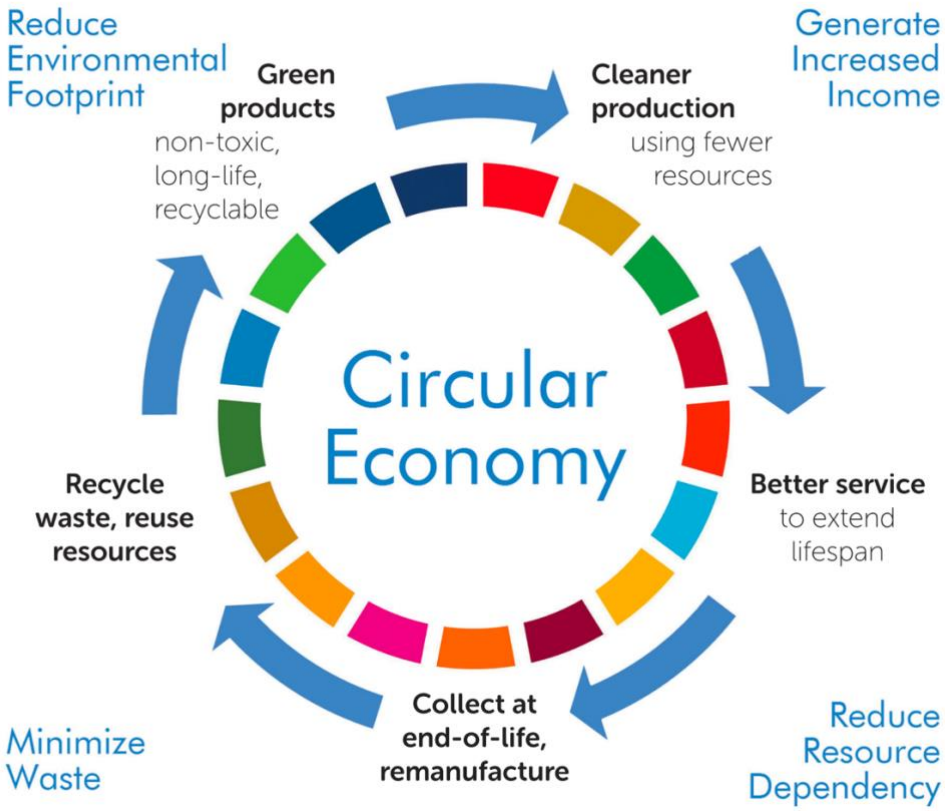
> *"one of the current sustainable economic models, in which products and materials are designed in such a way that they can be reused, remanufactured, recycled or recovered and thus maintained in the economy for as long as possible, along with the resources of which they are made, and the generation of waste, especially hazardous waste, is avoided or minimized, and greenhouse gas emissions are prevented or reduced"* [9]

Moreover, countries and international institutions show a key element for the definitions of a circular economy: the circularity of materials [10]. Circularity is related to closing and extending the loop of materials. Other key characteristics of a circular economy are listed by the Organization for Economic Co-operation and Development (OECD): increased product repair and remanufacture, increased material recycling, long-lived products through design, increased reuse and repair, increased material productivity, improved asset utilization, and modified consumer behavior [11]. The direct effects of a more circular economy can be described as a decreased need for new goods (and virgin materials), the substitution of secondary raw materials in production, an expanded secondary sector, more durable and repairable products, and an expanded sharing and service economies [11].

## The circular economy can contribute to more sustainable development.

The main characteristics of a circular economy may be related to the circular flows of resources, materials, and products; however, the intended benefits of a circular economy can affect the whole society. The United Nations Industrial Development Organization (UNIDO) lists the benefits of a circular economy in four groups: reduced environmental footprint, generate increased income, reduced resource dependency, and minimize waste (Figure 4).

*Figure 4: the benefits of a circular economy can be related to reduced environmental footprint, increased income, reduced resource dependency, and minimization of waste*




*Source: United Nations Industrial Development Organization (UNIDO)* [12]

Some of these benefits were already mentioned (reduced environmental impacts related to the use of materials and waste minimization to a more resource-efficient society). Below, we list examples of the other benefits.

- **Circular economy can improve the resilience of countries on international disruption of supply chains.** In response to the impacts of the COVID-19, the United Nations drew attention to the need to increase a circular economy as a possible action for resilience and efficiency [13].
- **Green jobs are promoted through several sectors of a circular economy.** Jobs related to environmental goods and service sectors are connected to key characteristics and effects of a circular economy, such as services to keep products in the loop (e.g., repair, reuse, remanufacture, refurbish) and waste management (e.g., recycling and recovering) [14].

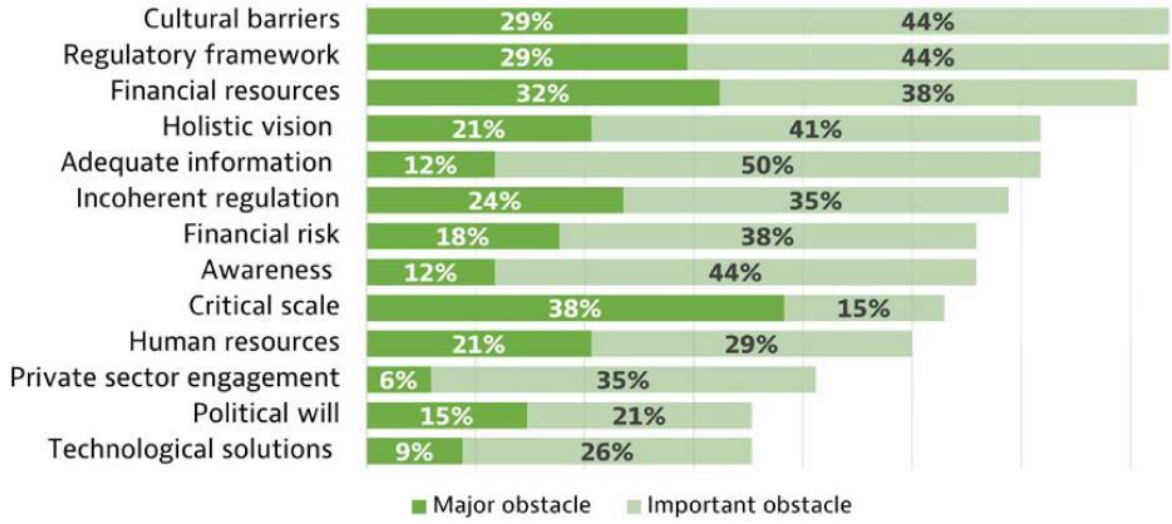
# Part 2: Policy

## Policy framework and legal background for the circular economy

The transition to a more circular economy is closely aligned with policy goals reflected in legal frameworks and international agreements. Indeed, some of the United Nation's Sustainable Development Goals directly connect to a circular economy. In addition, countries in the UNECE region are actively pursuing a national policy that promotes the transition to a circular economy regarding more sustainable use of natural resources [13]. These policies integrate legal and market instruments and often focus on particular sectors, such as plastic, food, or textiles [13]. Moreover, given the diversity of the countries in the region, different aspects of the transition can be covered by each country, which creates an opportunity for exchange and mutual learning [13] to overcome obstacles for a circular economy transition.

Interestingly, the OECD mentions important obstacles related to policy and regulation based on the analysis of several countries (Figure 5). An important barrier to a circular economy transition is the adequacy of regulatory frameworks. Policy-making is also directly linked to other important obstacles, such as financial resources, incoherent regulation, and political will. The following subsection reviews some of the policy frameworks and legal background for a circular economy transition in the target countries.

*Figure 5: Obstacles to a circular economy transition*




*Source: Organization for Economic Co-operation and Development OECD* [15]

## Circular economy information for decision-making in the target countries

**Armenia** – There is no specific circular economy framework in the country. However, policy and frameworks regarding waste management exist, but they mostly focus on municipal solid waste [16]. Policy-wise little attention is given to important waste streams in the Armenian economy, such as agricultural, industrial, chemical, automotive, and electrical and electronic equipment [16]. Policy frameworks in the waste management direction include the Government Program (N65-Ա) from February 2019 and the 2017–2036 Municipal Solid Waste Management System Development Strategy. The first gives the main principle of the country's environmental management but does not mention a circular economy transition. The second creates an integrated system of municipal solid waste management according to European Union standards. While this system shapes conditions for better solid waste collection and sanitary cleaning services, little focus is given to separate collection, whereas recycling targets are considered low compared to other European countries [16].

**Bosnia and Herzegovina** – There is no specific circular economy framework in the country. The term is also not mentioned in policies or regulations at the entities or state level [17]. However, the Environmental Protection Strategy of the Federation of Bosnia and Herzegovina for the period 2008–2018 gives important directions to environmental protection covering the use of economic instruments; nature, land, and air protection; and waste management

[18]. Since 2011, some improvement in waste management has been made with adopting the system of operators, which stimulates separate collection, reuse, and recycling [18]. However, this system still needs improvement to include specific waste streams, such as batteries, medicines, and end-of-life vehicles. Moreover, the system does not include municipal solid waste service, which still needs proper long-term management solution [18]. The inclusion of these waste streams could help Bosnia and Herzegovina to achieve progress towards waste-related SDGs.

**Georgia** – The country is in the process of developing a circular economy strategy that includes production, consumption, waste management, secondary raw materials, innovation, and investments [19]. In this direction, Georgia introduced the Extended Producer Responsibility in its Waste Management Code. Extended Producer Responsibility is a financial instrument that attributes to the producer (either manufacturer or importer) the responsibility and costs for the collection, and eventually for sorting and treating, of used products. This is an important step to improve the recycling scheme in the country and to bring about the financial resources to ensure improved separate collection, recycling, recovery, or waste treatment [19]. Georgia's Extended Producer Responsibility is currently used for waste from electric and electronic equipment, used oils, end-of-life tires, waste batteries, and waste accumulators. Moreover, the Extended Producer Responsibility regulations are under discussion for packaging and end-of-life vehicles. In parallel, the government is also developing a Climate Action Plan and a Green Economy strategy. The latter articulates the country's plans to adopt the 2009 OECD Declaration on Green Growth [20].

**Kazakhstan** – Although no specific circular economy framework exists in the country, many actions are taken regarding a circular transition. For example, the city of Almaty was the first in Central Asia to carry out a study about circular economy opportunities [21]. The study presented some key areas to foster the circular economy in the city, such as agriculture and food processing, service and local industry, and construction. Also, it concluded that the circular economy is far from a new concept in the city as local industries already collect and recycle an important share of materials, which is related to the country's Green Growth agenda [21]. Indeed, Kazakhstan is defining and implementing sustainable development ambitions under the Conception of Kazakhstan on the Transition to Green Economy in three phases (2013-2020, 2020-2030, and 2030-2050). This is accompanied by the State Record of

Production and Consumption of Waste, which provides a unified information system, and Extended Producer Responsibility for waste vehicles and their components, and waste electrical and electronic equipment.

**Kyrgyzstan** – The Kyrgyz Republic took steps for a circular economy transition in its National Strategy for Sustainable Development (2013–2017), which includes requirements on assessing mineral resource extraction (costs and benefits), on promoting more efficient use of water resources and sustainable use of land, and energy efficiency and savings (EC, 2020). This strategy paved the way for integrating green economy considerations into national legislation, such as the laws on environmental protection, atmospheric air, renewable energy sources, public health, and the forest code (EC, 2020). What is more, the Sustainable Development Strategy in Industry (2019–2023) promotes environment-friendly investments to decrease the amount of industrial waste with recycling (EC, 2020). Additionally, the Green Economy Development Program (20192023) focuses on priority sectors, such as green energy, green agriculture, green industry, low carbon transportation, sustainable tourism, waste management, and green cities. This program includes circular economy concerns about waste management for the circularity of materials and emission reduction from waste disposal (EC, 2020). Overall, the Kyrgyz Republic has shaped several strategies on sustainable development and green economy, but there is a lack in planning hierarchy, budget for the objectives, and responsibility for implementation, which hinders the government key development objectives [22].

**North Macedonia** – There is no specific circular economy framework in the country. However, the country has taken important steps to improve its environmental performance by decreasing the dependence on fossil fuels to generate electricity in favor of renewables and strengthening waste and chemicals management [23]. Additionally, North Macedonia approved a ban on disposable packaging and plastics in state institutions in 2020 [24]. With this ban, government institutions should procure contracts only with companies that meet their Extended Producer Responsibility obligations to manage waste streams [24].

**Tajikistan** – There is no specific circular economy framework in the country. However, the country has sustainable development strategies to 2030 that are set in the National Development Strategy and Sustainable Development Transition Concept [20]. Still, there is no

mention of circular economy in the National Development Strategy. The basic for waste regulation is stipulated in the Law of Environmental Protection, but the country's policy-making process does not sufficiently consider an environmental plan, whereas the Committee on Environmental Protection, a government organization responding for environmental protection, lacks influence [20].

# Part 3: Statistics

## What to measure in the circular economy?

The transition to a more circular economy will take time. Monitoring the transition is essential to understand where to act and to make corrections when necessary. Monitoring systems can distinguish between *monitoring the transition process* and *monitoring the effects* of a circular economy [25]; these are explained in turn. Monitoring the transition can identify dynamics in groups of products, such as product design and proportion of circular products; it can also identify actions in government policies that accelerate the circular economy transition. Monitoring the effects looks at the transition results on natural resources consumption, environmental pressures, and socio-economic development.

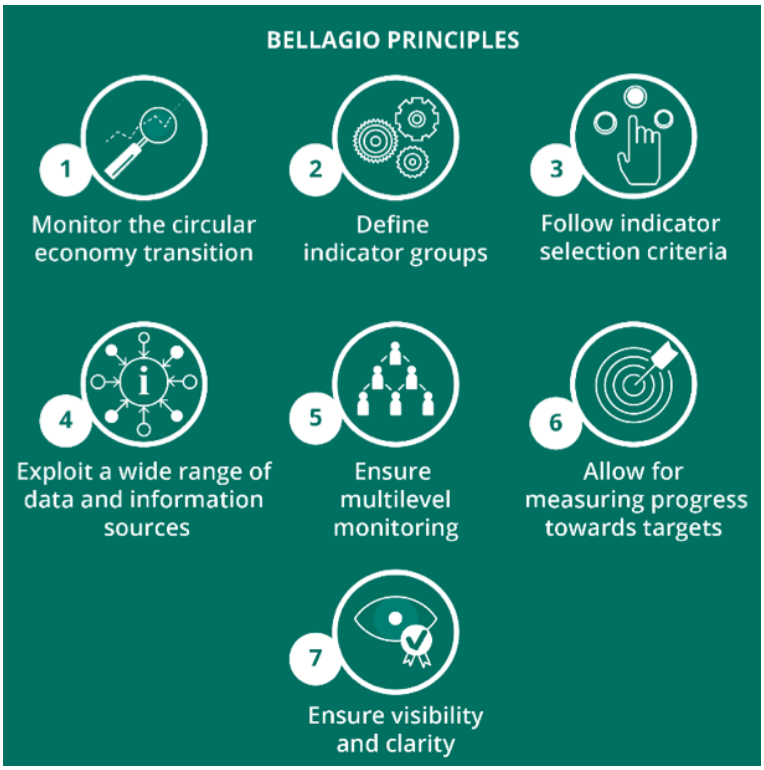
The in-depth review of measuring the circular economy produced a non-exhaustive list of the statistics that can be used or combined for measuring the circular economy [10]:

a) Demographic and social statistics
    - Labour (employment)
    - Income and consumption (of households)
b) Economic statistics
    - Economic accounts (value-added)
    - Business statistics (number of enterprises, revenue)
    - Trade (second-hand trade)
    - Prices
    - Labor costs
    - Science, technology, and innovation
c) Environment and multi-domain statistics
    - Environment statistics and System of Environmental-Economic Accounting (SEEA) (material stocks and flows, product lifespans, waste, secondary raw materials, etc.)
    - Information society
    - SDGs

With the aim to develop a consistent measurement system of the circular economy, the European Environmental Agency (EEA) and the Italian Institute for Environmental Protection

and Research (ISPRA) developed the Bellagio Declaration under the mandate of the European Network of the Heads of Environment Protection Agencies (EPA Network). This document proposes a set of seven principles for developing a circular monitoring system (Figure 6).

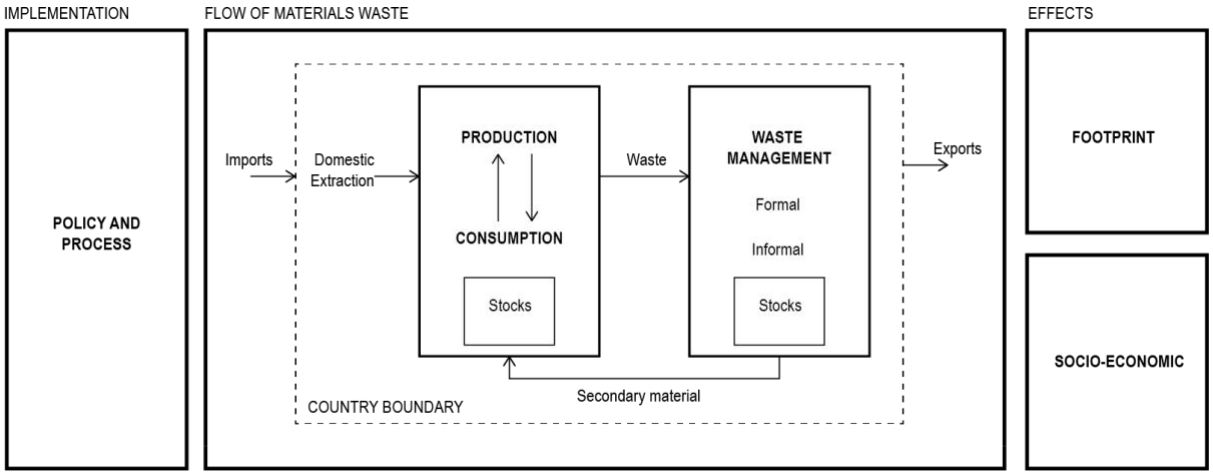
*Figure 6: Bellagio Declaration's seven principles*




*Source: European Environmental Agency EEA* [26]

Building on the knowledge of the existing monitoring systems [10], [25], [27] and the Bellagio Declaration, we propose a simplified framework to set up a national-level circular economy monitoring system (Figure 7). This framework pays particular attention to a key circular economy aspect of the flow of materials and waste.

*Figure 7: Simplified framework for national-level circular economy monitoring system*




## Circular economy indicators

Considering the framework for setting up a monitoring system (Figure 7) and the national capacities of the target countries, we made a proposition of indicators following the Bellagio Declaration (Table 1). These indicators were selected from existing environmental or circular economy frameworks. Those are the UN's SDG indicators, the UNECE Environmental Indicators, OECD circular economy indicators for regions, the European Commission's circular economy monitoring framework. The 17 indicators are grouped considering the four groups defined in the Bellagio Principles: Environmental Footprint, Material and waste, Socio-economic impact, and Policy and process implementation.

Indicators for policy and process implementation were not defined because they are specific to national strategies and policy instruments. For example, an indicator for implementation of policy on sustainable development could be related to the amount of environmental taxes, which is specifically considering the current environmental situation and economic structure in each country. Because of this specificity, this group of indicators may offer little comparability among countries and was left to be defined on a country basis. Examples of indicators for policy and process implementation can be found on the OECD's review of circular economy indicators, such as "No. of companies coached by the city/region to adopt circular economy principles" or "City/region % of public investment dedicated to the circular economy initiative/total public investment by the city/region" [28].

*Table 1: Selection of indicators for monitoring the Circular Economy transition, flow of materials and waste, and environmental footprint and socio-economic effects*

| Bellagio classification | Indicator | Source* | Indicator no. |
|---|---|---|---|
| Footprint | Aggregated GHG emissions (CO2 equivalents) | UNECE | B-3.5 |
| Footprint | Aggregated GHG emissions per capita | UNECE | B-3.1 |
| Footprint | Aggregated GHG emissions by sectors (Energy, Industrial Processes, Solvent, and Other Product use, Agriculture, Land use and forestry, Waste) | UNECE | B-3.4 |
| (Footprint) | Change in water use efficiency over time (SDG indicator 6.4.1) | UNECE | C-3.6 |
| (Footprint) | Proportion of wastewater safely treated (Indicator 6.3.1) | UN | |
| (Footprint) | Share of reused water in total freshwater use | UNECE | C-8.1 |
| (Footprint) | Renewable energy share in the total final energy consumption within the national territory (SDG indicator 7.2.1) | UNECE | G-4.2 |
| Material and waste | Material footprint, material footprint per capita, and material footprint per GDP (SDG indicator 12.2.1) | UNECE | I-1.4 |
| Material and waste | Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP (SDG indicator 12.2.2) | UNECE | I-1.5 |
| Material and waste | Annual total waste generation | UNECE | I-1.2 |
| Material and waste | Waste generation intensity per unit of GDP | UNECE | I-1.3 |
| Material and waste | Households waste generation intensity per capita | UNECE | I-1.1 |
| Material and waste | Food Loss Index (Indicator 12.3.1) | UN | 12.3.1 |
| Material and waste | Proportion of hazardous waste treated, by type of treatment (SDG indicator 12.4.2) | UNECE | I-2.2 |
| Material and waste | Proportion of urban solid waste regularly collected and with adequate final discharge out of total urban waste generated, by cities. (SDG indicator 11.6.1) | UNECE | I-3.1 |
| Material and waste | National recycling rate, tons of material recycled (SDG indicator 12.5.1) | UNECE | I-1.6 |
| Material and waste | Circular material use rate | EC | 7.b |
| Socio-economic impact | Private investments, jobs and GVA related to circular economy sectors: Gross investment intangible goods | EC | 9.a |
| Socio-economic impact | Private investments, jobs and GVA related to circular economy sectors: Number of persons employed | EC | 9.b |
| Socio-economic impact | Private investments, jobs and GVA related to circular economy sectors: Value-added at factor cost | EC | 9.c |
| Socio-economic impact | No. of new circular business (e.g. companies, start-up, etc.) created to implement the circular economy initiative | OECD | - |
| Socio-economic impact | No. of businesses (e.g. companies, start-ups, etc.) adopting circular economy principles | OECD | - |
| Policy and process implementation | To be defined at country level | - | - |

*United Nations (UN)
*United Nations Economic Commission for Europe (UNECE)
*European Commission (EC)
*Organization for Economic Co-operation and Development (OECD)

## Measuring and monitoring circular economy in the target countries

The proposed indicators in Table 1 were analyzed against the available data published by National Statistical Offices or international organizations, such as UNECE, EEA, and OECD. The result of the analysis is shown in Figure 8. The examination shows a heterogeneous pattern in data availability. Although data for some indicators are largely available, such as Domestic Material Consumption, Aggregated GHG Emissions, and Annual Waste Generation, data for

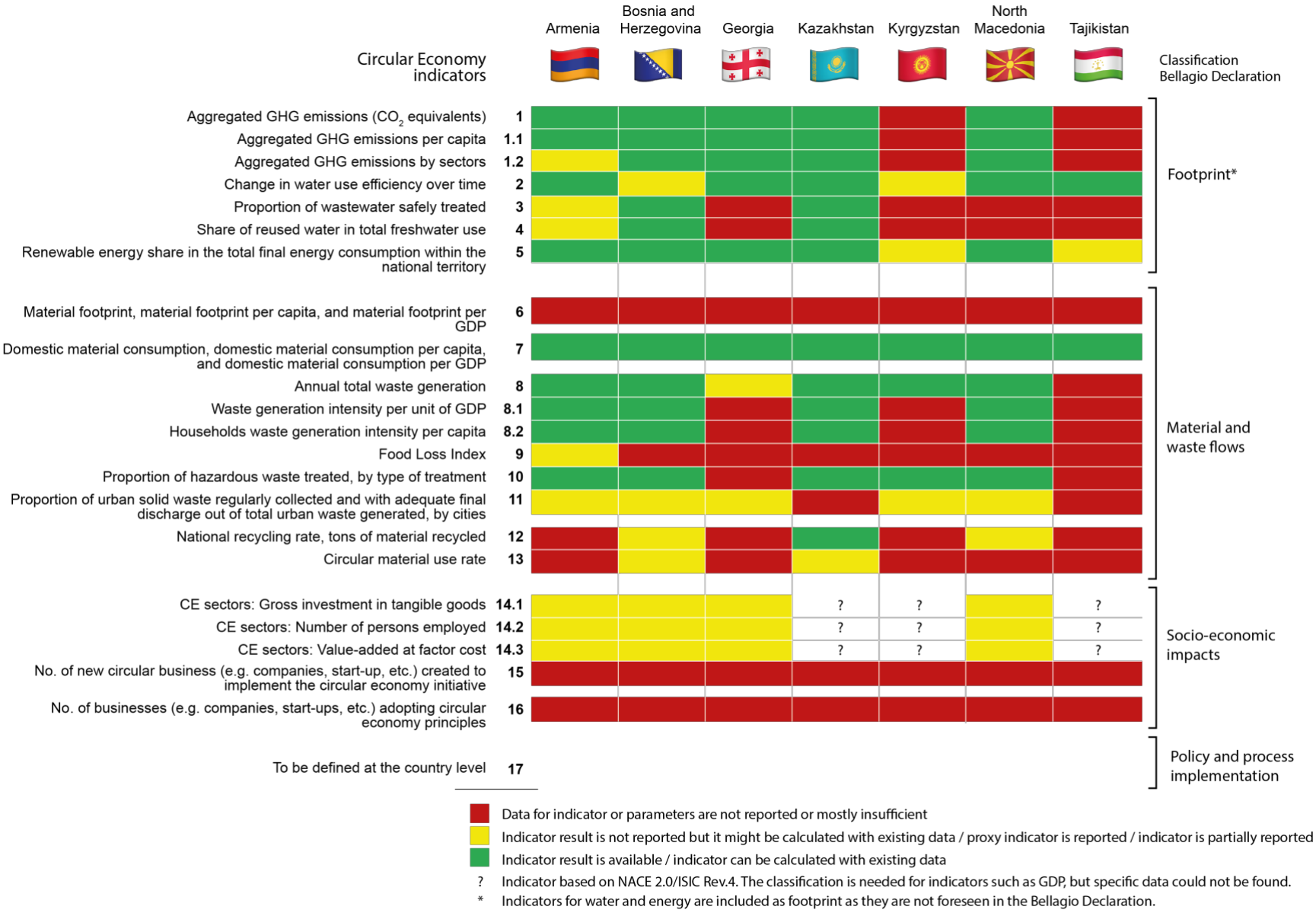
other indicators might be missing in many countries. In this sense, particularly important data for a circular economy is not largely available. This is the case of National Recycling Rates that is only fully available in Kazakhstan.

Nonetheless, there are relevant opportunities for the reporting of those indicators. For example, all the indicators classified with a yellow label can be reported with existing data used in other indicators. For example, the indicators for socio-economic development taken from the European Commission (EC) are based on national accountings and may be calculated using NACE 2.0 classifications[2].

Sources for the analysis are listed at the end of this document.

[2] Statistical Classification of Economic Activities in the European Community (NACE)

*Figure 8: Analysis of the proposed circular economy indicators considering data availability*



# Recommendations

This report presents a panorama of measuring the circular economy with the identification of strong and weak points in policy from the target countries. The structure in this report has three axes considering a similar conceptual approach to be used in the **Second Regional Conference: Measuring and monitoring the circular economy and the use of data for policy-making**. All in all, the analysis of these three axes leads to the identification of an indicator scoreboard that may be used in the target countries to assess the circular economy transition. With the selection of these indicators, we followed principles of the Bellagio declaration putting special attention in investigating data already available from the target countries. This scoreboard, however, is not intended as a definitive measuring system for the circular economy but rather a suggestion of how one could measure aspects of a circular economy considering the regional situation in the target countries. Hence, we still need to be attentive and collaborative in the international discussion about measuring the circular economy.

Moreover, some recommendations are derived from this report analysis that can be useful in advance the production, availability, and use of circular economy indicators:

- Some of the target countries are already incorporating circular economy strategies in their policy-making, either by specific frameworks or by including the circular economy in existing frameworks for sustainable development and green economy. However, most target countries still need to advance the inclusion of circular economy strategies in their policy-making, and this can be done by taking examples of the international experience.
- For the development and selection of circular economy indicators, target countries can use the extensive standardization developed by UNECE based on the Shared Environmental Information System (SEIS); this can foster transparency with the use of indicators and make the result comparable among countries. Also, it is important to be attentive to the particular situation in each country and the result of certain indicators. For example, indicators per capita (e.g., municipal waste generation per capita) may show the distorted figures for countries highly dependent on tourism (that is, important unregistered population).

- A wide accepted conceptualization of the circular economy is still to be defined internationally. Thus, any policy towards a circular economy will be limited in scope. A starting point is to create instruments to decrease waste generation with, for example, fostering recycling rates. Further development can look at the whole lifecycle of products, including, for example, durability or repairability.
- Incentivizing the service industry towards the circular economy is an important step to the development of new green jobs (e.g., repair shops, second-hand shops, product-service systems).
- A transition to the circular economy should take into consideration environmental impacts. To this, the promotion of green energy is greatly important.
- Policy and process implementation indicators should be defined regarding the particular situation of each country. For example, the promotion of less waste generation can be quite different depending on the economic situation in each country. On the one hand, countries highly dependent on the mining of primary resources should look to diversify their industry, but also to decrease waste generation mining (such as tailings) by promoting better extraction technology. On the other hand, countries dependent on tourism and hospitality services can promote decreasing food waste either by, for example, conscientization of industry and citizens or by creating instruments for green waste separate collection.

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# Appendix

## Armenia

| Nr | Indicator | Source for data |
|---|---|---|
| 1 | Aggregated GHG emissions (CO2 equivalents) | https://armstatbank.am/pxweb/en/ArmStatBank/ArmStatBank__8%20Environment__(B)%20Climate%20change__(B3)%20Greenhouse%20gas%20emissions/EE-b3-2.px/?rxid=c169b79c-9f82-4878-a96a-9e404a9f976b,c169b79c-9f82-4878-a96a-9e404a9f976b |
| 1.1 | Aggregated GHG emissions per capita | https://armstatbank.am/pxweb/en/ArmStatBank/ArmStatBank__8%20Environment__(B)%20Climate%20change__(B3)%20Greenhouse%20gas%20emissions/EE-b3-2.px/?rxid=c169b79c-9f82-4878-a96a-9e404a9f976b,c169b79c-9f82-4878-a96a-9e404a9f976b |
| 1.2 | Aggregated GHG emissions by sectors (Energy, Industrial Processes, Solvent, and Other Product use, Agriculture, Land use and forestry, Waste) | indicator incomplete but reported by ArmStatBank https://armstatbank.am/pxweb/en/ArmStatBank/ArmStatBank__8%20Environment__(B)%20Climate%20change__(B3)%20Greenhouse%20gas%20emissions/EE-b3-2.px/?rxid=c169b79c-9f82-4878-a96a-9e404a9f976b,c169b79c-9f82-4878-a96a-9e404a9f976b |
| 2 | Change in water use efficiency over time (SDG indicator 6.4.1) | https://sdg.armstat.am/6-4-1/ |
| 3 | Proportion of wastewater safely treated (SDG Indicator 6.3.1) | indicator not reported. Alternative indicator reported 6.3.1.a Reported online https://sdg.armstat.am/6-3-1-a/ Proportion of insufficiently treated wastewater in the total volume of generated wastewater |
| 4 | Share of reused water in total freshwater use | Indicator for freshwater abstraction is reported. Other parameters not found https://armstatbank.am/pxweb/en/ArmStatBank/?rxid=c169b79c-9f82-4878-a96a-9e404a9f976b&rxid=c169b79c-9f82-4878-a96a-9e404a9f976b |
| 5 | Renewable energy share in the total final energy consumption within the national territory (SDG indicator 7.2.1) | https://sdg.armstat.am/7-2-1/ |
| | | |
| 6 | Material footprint, material footprint per capita, and material footprint per GDP (SDG indicator 12.2.1) | Data not found in the national reporting system |
| 7 | Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP (SDG indicator 12.2.2) | https://w3.unece.org/PXWeb2015/pxweb/en/STAT/STAT__92-SDG__01-sdgover/012_en_sdGoal12_r.px/table/tableViewLayout1/ |
| 8 | Annual total waste generation | https://armstatbank.am/pxweb/en/ArmStatBank/ArmStatBank__8%20Environment__(I)%20Waste/EE-i1-1.px/?rxid=c169b79c-9f82-4878-a96a-9e404a9f976b,c169b79c-9f82-4878-a96a-9e404a9f976b |
| 8.1 | Waste generation intensity per unit of GDP | https://armstatbank.am/pxweb/en/ArmStatBank/ArmStatBank__8%20Environment__(I)%20Waste/EE-i1-1.px/?rxid=c169b79c-9f82-4878-a96a-9e404a9f976b,c169b79c-9f82-4878-a96a-9e404a9f976b |
| 8.2 | Households waste generation intensity per capita | Municipal waste generation per capita. maybe similar methodology https://armstatbank.am/pxweb/en/ArmStatBank/ArmStatBank__8%20Environment__(I)%20Waste/EE-i1-1.px/chart/chartViewLine/?rxid=c169b79c-9f82-4878-a96a-9e404a9f976b,c169b79c-9f82-4878-a96a-9e404a9f976b |
| 9 | Food Loss Index (Indicator 12.3.1) | Indicator food loss reported Indicator 12.3.1.a: Food loss https://sdg.armstat.am/12-3-1-a/ |

| | | |
|---|---|---|
| 10 | Proportion of hazardous waste treated, by type of treatment (SDG indicator 12.4.2) | https://sdg.armstat.am/12-4-2/ |
| 11 | Proportion of urban solid waste regularly collected and with adequate final discharge out of total urban waste generated, by cities. (SDG indicator 11.6.1) | Data for proxy indicator reported. Indicator 11.6.1.a: Urban solid waste regularly collected with adequate final discharge https://sdg.armstat.am/11-6-1-a/ |
| 12 | National recycling rate, tons of material recycled (SDG indicator 12.5.1) | Data not found in the national reporting system |
| 13 | Circular material use rate | Data not found in the national reporting system |
| | | |
| 14.1 | Private investments, jobs and GVA related to circular economy sectors: Gross investment in tangible goods | This indicator is based on national accounts and use a selection of NACE codes. The country uses NACE-equivalent codes for the calculation of GDP. Hence, the data could be extracted. |
| 14.2 | Private investments, jobs and GVA related to circular economy sectors: Number of persons employed | This indicator is based on national accounts and use a selection of NACE codes. The country uses NACE-equivalent codes for the calculation of GDP. Hence, the data could be extracted. |
| 14.3 | Private investments, jobs and GVA related to circular economy sectors: Value-added at factor cost | This indicator is based on national accounts and use a selection of NACE codes. The country uses NACE-equivalent codes for the calculation of GDP. Hence, the data could be extracted. |
| 15 | No. of new circular business (e.g. companies, start-up, etc.) created to implement the circular economy initiative | Data not found in the national reporting system |
| 16 | No. of businesses (e.g. companies, start-ups, etc.) adopting circular economy principles | Data not found in the national reporting system |

## Bosnia and Herzegovina

| Nr | Indicator | Source for data |
|---|---|---|
| 1 | Aggregated GHG emissions (CO2 equivalents) | https://bhas.gov.ba/data/Publikacije/VremenskeSerije/UNECE.xls |
| 1.1 | Aggregated GHG emissions per capita | https://bhas.gov.ba/data/Publikacije/VremenskeSerije/UNECE.xls |
| 1.2 | Aggregated GHG emissions by sectors (Energy, Industrial Processes, Solvent, and Other Product use, Agriculture, Land use and forestry, Waste) | https://bhas.gov.ba/data/Publikacije/VremenskeSerije/UNECE.xls |
| 2 | Change in water use efficiency over time (SDG indicator 6.4.1) | May be possible to calculate. parameters reported https://bhas.gov.ba/data/Publikacije/VremenskeSerije/UNECE.xls |
| 3 | Proportion of wastewater safely treated (SDG Indicator 6.3.1) | https://sdg.bhas.gov.ba/6-3-1/ |
| 4 | Share of reused water in total freshwater use | https://bhas.gov.ba/data/Publikacije/VremenskeSerije/UNECE.xls |
| 5 | Renewable energy share in the total final energy consumption within the national territory (SDG indicator 7.2.1) | https://bhas.gov.ba/data/Publikacije/VremenskeSerije/UNECE.xls |
| | | |

| | | |
|---|---|---|
| 6 | Material footprint, material footprint per capita, and material footprint per GDP (SDG indicator 12.2.1) | Data not found in the national reporting system |
| 7 | Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP (SDG indicator 12.2.2) | https://bhas.gov.ba/data/Publikacije/Saopstenja/2021/ENV_11_2017_Y2_1_BS.pdf |
| 8 | Annual total waste generation | https://bhas.gov.ba/data/Publikacije/Saopstenja/2021/ENV_11_2017_Y2_1_BS.pdf |
| 8.1 | Waste generation intensity per unit of GDP | Indicator not explicitly reported but data for the calculation exists https://bhas.gov.ba/data/Publikacije/Saopstenja/2019/ENV_05_2018_Y1_0_BS.pdf |
| 8.2 | Households waste generation intensity per capita | https://bhas.gov.ba/data/Publikacije/VremenskeSerije/UNECE.xls |
| 9 | Food Loss Index (Indicator 12.3.1) | Food loss estimated 2020 with low confidence https://unstats.un.org/sdgs/indicators/database/ |
| 10 | Proportion of hazardous waste treated, by type of treatment (SDG indicator 12.4.2) | https://sdg.bhas.gov.ba/12-4-2/ |
| 11 | Proportion of urban solid waste regularly collected and with adequate final discharge out of total urban waste generated, by cities. (SDG indicator 11.6.1) | Partially reported https://bhas.gov.ba/data/Publikacije/VremenskeSerije/UNECE.xls |
| 12 | National recycling rate, tons of material recycled (SDG indicator 12.5.1) | Potentially calculable https://bhas.gov.ba/data/Publikacije/Saopstenja/2019/ENV_05_2017_Y1_0_BS.pdf |
| 13 | Circular material use rate | Potentially calculable https://bhas.gov.ba/data/Publikacije/Saopstenja/2019/ENV_05_2017_Y1_0_BS.pdf |
| | | |
| 14.1 | Private investments, jobs and GVA related to circular economy sectors: Gross investment in tangible goods | This indicator is based on national accounts and use a selection of NACE codes. The country uses NACE-equivalent codes for the calculation of GDP. Hence, the data could be extracted. |
| 14.2 | Private investments, jobs and GVA related to circular economy sectors: Number of persons employed | This indicator is based on national accounts and use a selection of NACE codes. The country uses NACE-equivalent codes for the calculation of GDP. Hence, the data could be extracted. |
| 14.3 | Private investments, jobs and GVA related to circular economy sectors: Value-added at factor cost | This indicator is based on national accounts and use a selection of NACE codes. The country uses NACE-equivalent codes for the calculation of GDP. Hence, the data could be extracted. |
| 15 | No. of new circular business (e.g. companies, start-up, etc.) created to implement the circular economy initiative | Data not found in the national reporting system |
| 16 | No. of businesses (e.g. companies, start-ups, etc.) adopting circular economy principles | Data not found in the national reporting system |

## Georgia

| Nr | Indicator | Source for data |
|---|---|---|
| 1 | Aggregated GHG emissions (CO2 equivalents) | https://geostat.ge/media/39730/B-3.-Greenhouse-gas-emissions-ENG.XLSX |
| 1.1 | Aggregated GHG emissions per capita | https://geostat.ge/media/39730/B-3.-Greenhouse-gas-emissions-ENG.XLSX |

| | | |
|---|---|---|
| 1.2 | Aggregated GHG emissions by sectors (Energy, Industrial Processes, Solvent, and Other Product use, Agriculture, Land use and forestry, Waste) | https://geostat.ge/media/39730/B-3.-Greenhouse-gas-emissions-ENG.XLSX |
| 2 | Change in water use efficiency over time (SDG indicator 6.4.1) | reported https://unstats.un.org/sdgs/indicators/database/ |
| 3 | Proportion of wastewater safely treated (SDG Indicator 6.3.1) | Some parameter estimated 2020 or reported 2015 https://unstats.un.org/sdgs/indicators/database/ |
| 4 | Share of reused water in total freshwater use | |
| 5 | Renewable energy share in the total final energy consumption within the national territory (SDG indicator 7.2.1) | https://geostat.ge/media/35836/G-4.-Renewable-energy-supply_ENG.xls |
| | | |
| 6 | Material footprint, material footprint per capita, and material footprint per GDP (SDG indicator 12.2.1) | Data not found in the national reporting system |
| 7 | Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP (SDG indicator 12.2.2) | https://www.geostat.ge/en/modules/categories/566/environmental-economic-accounts |
| 8 | Annual total waste generation | data 2007 https://unstats.un.org/sdgs/indicators/database/ |
| 8.1 | Waste generation intensity per unit of GDP | Data not found in the national reporting system |
| 8.2 | Households waste generation intensity per capita | Data not found in the national reporting system |
| 9 | Food Loss Index (Indicator 12.3.1) | Food loss estimated 2020 with low confidence https://unstats.un.org/sdgs/indicators/database/ |
| 10 | Proportion of hazardous waste treated, by type of treatment (SDG indicator 12.4.2) | Data not found in the national reporting system |
| 11 | Proportion of urban solid waste regularly collected and with adequate final discharge out of total urban waste generated, by cities. (SDG indicator 11.6.1) | estimated for 3 cities in 2007 https://unstats.un.org/sdgs/indicators/database/ |
| 12 | National recycling rate, tons of material recycled (SDG indicator 12.5.1) | Data not found in the national reporting system |
| 13 | Circular material use rate | Data not found in the national reporting system |
| | | |
| 14.1 | Private investments, jobs and GVA related to circular economy sectors: Gross investment in tangible goods | This indicator is based on national accounts and use a selection of NACE codes. The country uses NACE-equivalent codes for the calculation of GDP. Hence, the data could be extracted. |
| 14.2 | Private investments, jobs and GVA related to circular economy sectors: Number of persons employed | This indicator is based on national accounts and use a selection of NACE codes. The country uses NACE-equivalent codes for the calculation of GDP. Hence, the data could be extracted. |
| 14.3 | Private investments, jobs and GVA related to circular economy sectors: Value-added at factor cost | This indicator is based on national accounts and use a selection of NACE codes. The country uses NACE-equivalent codes for the calculation of GDP. Hence, the data could be extracted. |
| 15 | No. of new circular business (e.g. companies, start-up, etc.) created to implement the circular economy initiative | Data not found in the national reporting system |

| | | |
|---|---|---|
| 16 | No. of businesses (e.g. companies, start-ups, etc.) adopting circular economy principles | Data not found in the national reporting system |

## Kazakhstan

| Nr | Indicator | Source for data |
|---|---|---|
| 1 | Aggregated GHG emissions (CO2 equivalents) | https://stat.gov.kz/api/getFile/?docId=ESTAT085882 |
| 1.1 | Aggregated GHG emissions per capita | https://stat.gov.kz/api/getFile/?docId=ESTAT085882 |
| 1.2 | Aggregated GHG emissions by sectors (Energy, Industrial Processes, Solvent, and Other Product use, Agriculture, Land use and forestry, Waste) | https://stat.gov.kz/api/getFile/?docId=ESTAT085882 |
| 2 | Change in water use efficiency over time (SDG indicator 6.4.1) | reported https://unstats.un.org/sdgs/indicators/database/<br>https://stat.gov.kz/for_users/ecologic_indicators/ecologic_indicator/reuse_and_recycling_of_freshwater |
| 3 | Proportion of wastewater safely treated (SDG Indicator 6.3.1) | estimated 2020 https://unstats.un.org/sdgs/indicators/database/<br>https://stat.gov.kz/for_users/ecologic_indicators/ecologic_indicator/waste_water_treatment |
| 4 | Share of reused water in total freshwater use | https://stat.gov.kz/for_users/ecologic_indicators/ecologic_indicator/reuse_and_recycling_of_freshwater |
| 5 | Renewable energy share in the total final energy consumption within the national territory (SDG indicator 7.2.1) | estimated https://unstats.un.org/sdgs/indicators/database/ |
| | | |
| 6 | Material footprint, material footprint per capita, and material footprint per GDP (SDG indicator 12.2.1) | Data not found in the national reporting system |
| 7 | Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP<br>(SDG indicator 12.2.2) | Estimated 2000-2017 https://unstats.un.org/sdgs/indicators/database/ |
| 8 | Annual total waste generation | https://unstats.un.org/sdgs/indicators/database/ |
| 8.1 | Waste generation intensity per unit of GDP | https://stat.gov.kz/api/getFile/?docId=ESTAT085908 |
| 8.2 | Households waste generation intensity per capita | municipal waste collection https://stat.gov.kz/api/getFile/?docId=ESTAT085908 |
| 9 | Food Loss Index (Indicator 12.3.1) | Food loss estimated 2020 with low confidence https://unstats.un.org/sdgs/indicators/database/ |
| 10 | Proportion of hazardous waste treated, by type of treatment (SDG indicator 12.4.2) | https://unstats.un.org/sdgs/indicators/database/ |
| 11 | Proportion of urban solid waste regularly collected and with adequate final discharge out of total urban waste generated, by cities. (SDG indicator 11.6.1) | Data not found in the national reporting system |
| 12 | National recycling rate, tons of material recycled (SDG indicator 12.5.1) | Reported for collected waste https://stat.gov.kz/api/getFile/?docId=ESTAT085910 |
| 13 | Circular material use rate | potentially calculable https://stat.gov.kz/api/getFile/?docId=ESTAT085910 |

| | | |
|---|---|---|
| | | |
| 14.1 | Private investments, jobs and GVA related to circular economy sectors: Gross investment in tangible goods | This indicator is based on national accounts and use a selection of NACE codes. The country uses NACE-equivalent codes for the calculation of GDP. Hence, the data could be extracted. |
| 14.2 | Private investments, jobs and GVA related to circular economy sectors: Number of persons employed | This indicator is based on national accounts and use a selection of NACE codes. The country uses NACE-equivalent codes for the calculation of GDP. Hence, the data could be extracted. |
| 14.3 | Private investments, jobs and GVA related to circular economy sectors: Value-added at factor cost | This indicator is based on national accounts and use a selection of NACE codes. The country uses NACE-equivalent codes for the calculation of GDP. Hence, the data could be extracted. |
| 15 | No. of new circular business (e.g. companies, start-up, etc.) created to implement the circular economy initiative | Data not found in the national reporting system |
| 16 | No. of businesses (e.g. companies, start-ups, etc.) adopting circular economy principles | Data not found in the national reporting system |

## Kyrgystan

| Nr | Indicator | Source for data |
|---|---|---|
| 1 | Aggregated GHG emissions (CO2 equivalents) | Data not found in the national reporting system |
| 1.1 | Aggregated GHG emissions per capita | Data not found in the national reporting system |
| 1.2 | Aggregated GHG emissions by sectors (Energy, Industrial Processes, Solvent, and Other Product use, Agriculture, Land use and forestry, Waste) | Data not found in the national reporting system |
| 2 | Change in water use efficiency over time (SDG indicator 6.4.1) | estimated https://unstats.un.org/sdgs/indicators/database/ |
| 3 | Proportion of wastewater safely treated (SDG Indicator 6.3.1) | Some parameter estimated 2020 or reported 2015 https://unstats.un.org/sdgs/indicators/database/ |
| 4 | Share of reused water in total freshwater use | Data not found in the national reporting system |
| 5 | Renewable energy share in the total final energy consumption within the national territory (SDG indicator 7.2.1) | https://kazstat.github.io/sdg-site-kazstat/ru/7-2-1/ |
| | | |
| 6 | Material footprint, material footprint per capita, and material footprint per GDP (SDG indicator 12.2.1) | Data not found in the national reporting system |
| 7 | Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP (SDG indicator 12.2.2) | Estimated 2000-2017 https://unstats.un.org/sdgs/indicators/database/ |
| 8 | Annual total waste generation | https://unstats.un.org/sdgs/indicators/database/ |
| 8.1 | Waste generation intensity per unit of GDP | Data not found in the national reporting system |
| 8.2 | Households waste generation intensity per capita | Data not found in the national reporting system |

| | | |
|---|---|---|
| 9 | Food Loss Index (Indicator 12.3.1) | Food loss estimated 2020 with low confidence https://unstats.un.org/sdgs/indicators/database/ |
| 10 | Proportion of hazardous waste treated, by type of treatment (SDG indicator 12.4.2) | https://unstats.un.org/sdgs/indicators/database/ |
| 11 | Proportion of urban solid waste regularly collected and with adequate final discharge out of total urban waste generated, by cities. (SDG indicator 11.6.1) | estimated for 1 city in 2010 https://unstats.un.org/sdgs/indicators/database/ |
| 12 | National recycling rate, tons of material recycled (SDG indicator 12.5.1) | Data not found in the national reporting system |
| 13 | Circular material use rate | Data not found in the national reporting system |
| | | |
| 14.1 | Private investments, jobs and GVA related to circular economy sectors: Gross investment in tangible goods | This indicator is based on national accounts and use a selection of NACE codes. The country uses NACE-equivalent codes for the calculation of GDP. Hence, the data could be extracted. |
| 14.2 | Private investments, jobs and GVA related to circular economy sectors: Number of persons employed | This indicator is based on national accounts and use a selection of NACE codes. The country uses NACE-equivalent codes for the calculation of GDP. Hence, the data could be extracted. |
| 14.3 | Private investments, jobs and GVA related to circular economy sectors: Value-added at factor cost | This indicator is based on national accounts and use a selection of NACE codes. The country uses NACE-equivalent codes for the calculation of GDP. Hence, the data could be extracted. |
| 15 | No. of new circular business (e.g. companies, start-up, etc.) created to implement the circular economy initiative | Data not found in the national reporting system |
| 16 | No. of businesses (e.g. companies, start-ups, etc.) adopting circular economy principles | Data not found in the national reporting system |

## North Macedonia

| Nr | Indicator | Source for data |
|---|---|---|
| 1 | Aggregated GHG emissions (CO2 equivalents) | https://www.moepp.gov.mk/wp-content/uploads/2014/11/Zivotna-sredina-2019.pdf |
| 1.1 | Aggregated GHG emissions per capita | not reported but calculable https://www.moepp.gov.mk/wp-content/uploads/2014/11/Zivotna-sredina-2019.pdf |
| 1.2 | Aggregated GHG emissions by sectors (Energy, Industrial Processes, Solvent, and Other Product use, Agriculture, Land use and forestry, Waste) | https://www.moepp.gov.mk/wp-content/uploads/2014/11/Zivotna-sredina-2019.pdf |
| 2 | Change in water use efficiency over time (SDG indicator 6.4.1) | reported https://unstats.un.org/sdgs/indicators/database/ |
| 3 | Proportion of wastewater safely treated (SDG Indicator 6.3.1) | Some parameter estimated 2020 or reported 2015 https://unstats.un.org/sdgs/indicators/database/ |
| 4 | Share of reused water in total freshwater use | |
| 5 | Renewable energy share in the total final energy consumption within the national territory (SDG indicator 7.2.1) | estimated https://unstats.un.org/sdgs/indicators/database/ |

| | | |
|---|---|---|
| 6 | Material footprint, material footprint per capita, and material footprint per GDP (SDG indicator 12.2.1) | Data not found in the national reporting system |
| 7 | Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP (SDG indicator 12.2.2) | Estimated 2000-2017 https://unstats.un.org/sdgs/indicators/database/ |
| 8 | Annual total waste generation | https://unstats.un.org/sdgs/indicators/database/ https://www.moepp.gov.mk/wp-content/uploads/2014/11/Zivotna-sredina-2019.pdf |
| 8.1 | Waste generation intensity per unit of GDP | https://www.moepp.gov.mk/wp-content/uploads/2014/11/Zivotna-sredina-2019.pdf |
| 8.2 | Households waste generation intensity per capita | https://www.moepp.gov.mk/wp-content/uploads/2014/11/Zivotna-sredina-2019.pdf |
| 9 | Food Loss Index (Indicator 12.3.1) | Food loss estimated 2020 with low confidence https://unstats.un.org/sdgs/indicators/database/ |
| 10 | Proportion of hazardous waste treated, by type of treatment (SDG indicator 12.4.2) | https://unstats.un.org/sdgs/indicators/database/ |
| 11 | Proportion of urban solid waste regularly collected and with adequate final discharge out of total urban waste generated, by cities. (SDG indicator 11.6.1) | estimated for 1 city in 2012 https://unstats.un.org/sdgs/indicators/database/ |
| 12 | National recycling rate, tons of material recycled (SDG indicator 12.5.1) | they reported waste for some streams (separately collected?) https://www.moepp.gov.mk/wp-content/uploads/2014/11/Zivotna-sredina-2019.pdf |
| 13 | Circular material use rate | Data not found in the national reporting system |
| | | |
| 14.1 | Private investments, jobs and GVA related to circular economy sectors: Gross investment in tangible goods | This indicator is based on national accounts and use a selection of NACE codes. The country uses NACE-equivalent codes for the calculation of GDP. Hence, the data could be extracted. |
| 14.2 | Private investments, jobs and GVA related to circular economy sectors: Number of persons employed | This indicator is based on national accounts and use a selection of NACE codes. The country uses NACE-equivalent codes for the calculation of GDP. Hence, the data could be extracted. |
| 14.3 | Private investments, jobs and GVA related to circular economy sectors: Value-added at factor cost | This indicator is based on national accounts and use a selection of NACE codes. The country uses NACE-equivalent codes for the calculation of GDP. Hence, the data could be extracted. |
| 15 | No. of new circular business (e.g. companies, start-up, etc.) created to implement the circular economy initiative | Data not found in the national reporting system |
| 16 | No. of businesses (e.g. companies, start-ups, etc.) adopting circular economy principles | Data not found in the national reporting system |

## Tajikistan

| Nr | Indicator | Source for data |
|---|---|---|
| 1 | Aggregated GHG emissions (CO2 equivalents) | Data not found in the national reporting system |
| 1.1 | Aggregated GHG emissions per capita | Data not found in the national reporting system |

| | | |
|---|---|---|
| 1.2 | Aggregated GHG emissions by sectors (Energy, Industrial Processes, Solvent, and Other Product use, Agriculture, Land use and forestry, Waste) | Data not found in the national reporting system |
| 2 | Change in water use efficiency over time (SDG indicator 6.4.1) | reported https://unstats.un.org/sdgs/indicators/database/ |
| 3 | Proportion of wastewater safely treated (SDG Indicator 6.3.1) | Some parameter estimated 2020 or reported 2015 https://unstats.un.org/sdgs/indicators/database/ |
| 4 | Share of reused water in total freshwater use | |
| 5 | Renewable energy share in the total final energy consumption within the national territory (SDG indicator 7.2.1) | estimated https://unstats.un.org/sdgs/indicators/database/ |
| | | |
| 6 | Material footprint, material footprint per capita, and material footprint per GDP (SDG indicator 12.2.1) | Data not found in the national reporting system |
| 7 | Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP (SDG indicator 12.2.2) | Estimated 2000-2017 https://unstats.un.org/sdgs/indicators/database/ |
| 8 | Annual total waste generation | Data not found in the national reporting system |
| 8.1 | Waste generation intensity per unit of GDP | Data not found in the national reporting system |
| 8.2 | Households waste generation intensity per capita | Data not found in the national reporting system |
| 9 | Food Loss Index (Indicator 12.3.1) | Food loss estimated 2020 with low confidence https://unstats.un.org/sdgs/indicators/database/ |
| 10 | Proportion of hazardous waste treated, by type of treatment (SDG indicator 12.4.2) | Data not found in the national reporting system |
| 11 | Proportion of urban solid waste regularly collected and with adequate final discharge out of total urban waste generated, by cities. (SDG indicator 11.6.1) | Data not found in the national reporting system |
| 12 | National recycling rate, tons of material recycled (SDG indicator 12.5.1) | Data not found in the national reporting system |
| 13 | Circular material use rate | Data not found in the national reporting system |
| | | |
| 14.1 | Private investments, jobs and GVA related to circular economy sectors: Gross investment in tangible goods | This indicator is based on national accounts and use a selection of NACE codes. The country uses NACE-equivalent codes for the calculation of GDP. Hence, the data could be extracted. |
| 14.2 | Private investments, jobs and GVA related to circular economy sectors: Number of persons employed | This indicator is based on national accounts and use a selection of NACE codes. The country uses NACE-equivalent codes for the calculation of GDP. Hence, the data could be extracted. |
| 14.3 | Private investments, jobs and GVA related to circular economy sectors: Value-added at factor cost | This indicator is based on national accounts and use a selection of NACE codes. The country uses NACE-equivalent codes for the calculation of GDP. Hence, the data could be extracted. |
| 15 | No. of new circular business (e.g. companies, start-up, etc.) created to implement the circular economy initiative | Data not found in the national reporting system |

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|---|---|---|
| 16 | No. of businesses (e.g. companies, start-ups, etc.) adopting circular economy principles | Data not found in the national reporting system |