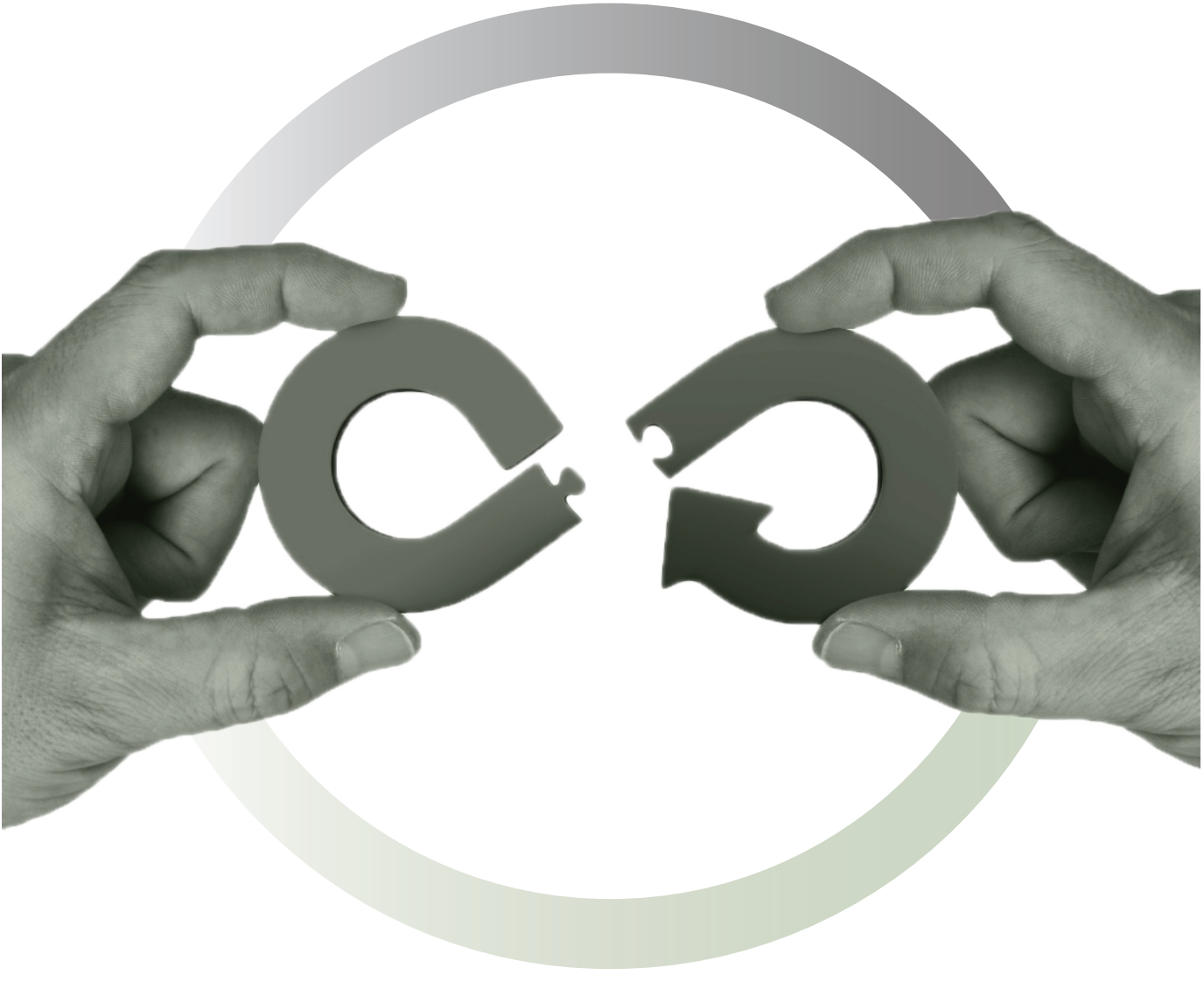
CIRCULAR ECONOMY

REGIONAL REPORT



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Regional Circular Economy Status Report

Written Contribution from Western Balkans and Turkey

January 2021

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Regional Status Report on Circular Economy

Written Contribution for the 2020 Annual Report

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01. Introduction

1.1 Circular Economy in the focus of the European Union

In the context of developing a modernized and sustainable economy, in December 2015, the EU Commission introduced the Circular Economy Package, which defines economy as 'where the value of products, materials and resources is maintained in the economy for as long as possible, and the generation of waste is minimized'.[8]

As half of total greenhouse gas emissions and more than 90% of biodiversity loss and water stress come from resource extraction and processing, the European Green Deal[1] launched a concerted strategy for a climate-neutral, resource-efficient and competitive economy. Scaling up the circular economy from front-runners to the mainstream economic players will make a decisive contribution to achieving climate neutrality by 2050 and decoupling economic growth from resource use, while ensuring the long-term competitiveness of the EU and leaving no one behind.

According to the A New Circular Economy Action Plan[2] for a cleaner and more competitive Europe, to fulfil the above-mentioned ambition, the EU needs to accelerate the transition towards a regenerative growth model that gives back to the planet more than it takes, advances towards keeping its resource consumption within planetary boundaries, and therefore strives to reduce its consumption footprint and double its circular material use rate in the coming decade.

The transformation from a linear economy based on the 'take-make-dispose' approach towards circular economy allows for a more ecological use of natural resources, low carbon emission, energy saving, and environmental protection, considering that natural resources are depleting at a fast pace with the world population increasing rapidly.[1] Further, it will stimulate the competitiveness between business companies by creating new prospects and innovative solutions to produce environmentally friendly products and services, expand job market at all levels and build chances for social

[1] COM (2019) 640 final

[2] A New Circular Economy Action Plan

integration.[13] Such advantages align well with the EU priorities on job growth, investments, social agenda and industrial innovation as foreseen in the Agenda for Sustainable Development 2030.[4]

As defined earlier, circular economy has in its core the sustainable developing process of the product throughout its life-cycle, from the production phase to the end-of-life phase. The phases that shape the life cycle of a product are described briefly in the following paragraphs.

On December 11, 2019, the European Commission presented the EU Green Deal, which consists of a package of ambitious measures aimed at creating a sustainable European economy. This package aims to turn environmental challenges into economic opportunities for citizens and businesses. The package consists of a roadmap with measures, which directly and indirectly contribute to the achievement of the EU's objectives for the transition to a Circular Economy.

With the introduction of the Green Deal, the European Commission pledged to develop a new action plan for Circular Economy. This commitment was reached in March 2020, when the EC approved and introduced the new Action Plan.

1.1.1 Production

Production and design define the very first phase of the life cycle of the product or service and where the circular economy begins. The attributed design of the product and service affects directly the use of natural resources, the impact on the environment and waste generation during its lifecycle.

Improved production processes allow for a more efficient energy consumption, better resource use, and limited hazardous chemical components and reduced waste generation. Since the processes differ from one product to another, the EU provides practices that will apply to each industrial sector through the 'best available technique reference documents' (BREFs), which will serve as guidance to the Member States when issuing

[3] Sustainable Products in a Circular Economy - Towards an EU Product Policy Framework contributing to the Circular Economy (4)

[4] On a monitoring framework for the circular economy (14)

production licenses. Other policies introduced by the EU in support to small and medium enterprises (SME) are the European Resource Efficiency Excellence Centre and the Enterprise Europe Network, which enable SMEs to take advantage of opportunities to progress resource efficiency and create innovative technologies.[1,5]

To further boost innovative processes, the Commission has proposed legislation that improves the rules on by-products waste, in the so-called process of industrial symbiosis, where the waste product from one company becomes a resource for product creation for another company".[6,7]

In support of policies that promote innovative production processes, EU has put forward the Ecodesign Working Plan and Energy Labelling regulation to prevent the loss of natural resources, extraction of valuable materials from consumed products and excessive waste generation. Acting together, the EU imposes rules on producing more efficient design materials used for the energy consuming products (electrical and electronic products) to be energy efficient and environmentally friendly. In perspective, Ecodesign Working Plan aims to also extend its regulation on non-energy consuming products by applying criteria on product reparability, component dismantling, availability of spare products, endurance and end-of-life treatment.[8,9]

In order to stimulate producers to manufacture products that are easy to recycle and comply to EU directives, based upon the revised Waste Framework Directive, the producers will be provided with financial incentives on the budget dedicated to the cost of waste generation from their products, under provisions on extended producer responsibility schemes.[1,2]

The main beneficiaries profiting from the transformation of the production process and design towards a more ecological approach are small and medium enterprises (SME), consumers and the environment. SMEs benefit from applying more efficient production technologies and design materials, controlled usage of resources and effective use of energy, which in turn

[5] On the implementation of circular economy action plan (9)
[6] Circular Economy, closing the loop, the production phase of the circular economy (2)
[7] Closing the loop - An EU action plan for the Circular Economy (1)
[8] Ibid
[9] Ecodesign Working Plan, 2016-2019 (13)

improves their financial budgets. Also, it will allow them to brand their products as reliable, reproducible and ecological, which in turn will have a positive impact on consumers' choice. While consumers will be informed about the product design, robustness and recyclability and helped to make smart choices.[10(1,2,9)] Finally, the environment will profit from the efficient use of natural resources and reduction of waste generation, which allows for a better resource recovery and less polluted areas from industrial wastes.

Global material productivity (the efficiency of material use) has grown substantially slower than labour and energy productivity.[11] It started to decline around the year 2000, and has been stagnating in recent years. Even though material productivity (defined as GDP per tonne of materials used) has improved rapidly in both old and new industrialized countries, the simultaneous shift of global production away from economies that have a higher material productivity to economies that have a lower material productivity explains how difficult it is to bring about a rapid improvement in global material efficiency. This means that the average environmental pressure and impact per euro of products and services have been increasing in the global economy since the start of the new millennium.[12]

1.1.2 Consumption to waste management

Consumption constitutes the second phase of circular economy and its weight in the cycle is heavily dependent on consumers' choice.

As half of total greenhouse gas emissions and more than 90% of biodiversity loss and water stress come from resource extraction and processing, the European Green Deal[13] launched a concerted strategy for a climate-neutral, resource-efficient and competitive economy.

For business, working together on creating the framework for sustainable products will provide new opportunities in the EU and beyond. This progressive, yet irreversible transition to a sustainable economic system is an

[10] On the implementation of circular economy action plan (9)

[11] IRP (2019), Global Resource Outlook 2019

[12] Leading the way to a global circular economy: state of play and outlook

[13] World Bank (2018), *What a Waste 2.0: A Global Snapshot of Solid Waste Management to 2050*.

indispensable part of the new EU industrial strategy. Building on the single market and the potential of digital technologies, circular economy can strengthen the EU's industrial base and foster business creation and entrepreneurship among SMEs. Innovative models based on a closer relationship with customers, mass customization, sharing and collaborative economy, and powered by digital technologies, such as the internet of things, big data, blockchain and artificial intelligence, will not only accelerate circularity but also the dematerialization of our economy and make Europe less dependent on primary materials. For citizens, circular economy will provide high-quality, functional and safe products, which are efficient and affordable, last longer and are designed for reuse, repair, and high-quality recycling. A whole new range of sustainable services, product-as-service models and digital solutions will bring about a better quality of life, innovative jobs and upgraded knowledge and skills. [14]

EU initiatives and legislation already address to a certain extent sustainability aspect of products, either on a mandatory or voluntary basis.

In response to the lack of accurate information over the environmentally impact of products, the EU, in cooperation with stakeholders, will introduce new measures and more restricted rules on claiming standards as 'Green' products. Product Environmental Footprint (PEF) and Organization Environmental Footprint (OEF) are the two methods which will examine the environmental effect of the product during its lifecycle and how to convey such information to the end-user; therefore, this will allow for environmental claims to be more straightforward, reliable and distinguishing. For instance, EU Ecolabel is being used to mark a product that is categorized as environmentally friendly.[15]

Special attention is paid to electric and electronic equipment and home appliances, which are labeled mainly on energy consumption criteria. Through such labeling, consumers will be informed over the energy consumption class of equipment, their performance durability and robustness. Economic incentives over the environmentally related costs of

[14] A new Circular Economy Action Plan, For a cleaner and more competitive Europe

[15] Closing the loop - An EU action plan for the Circular Economy (1)

the product and extension of the user's guarantee are considered as part of the measurements that facilitate consumers' purchase choices.[16][17]

Waste management, like consumption, is an important component of a circular economy. The success of turning waste into valuable material through recycling and extraction of precious components depends highly on the hierarchy of waste management. For this purpose, the most preferred methods are prevention, minimization, reuse and recycling. Otherwise, the least preferred alternatives where most of the materials are lost are incinerators and disposal in landfills.[18]

In order to prevent waste generation, the EU Commission will propose shortly new legislation on different sectors and will put forward waste reduction targets for specific streams in the context of Directive 2008/98/EC. It will also enhance the implementation of the recently adopted requirements for extended producers

responsibility schemes, provide incentives and encourage sharing of information and good practices in waste recycling.

Considering that the percentage of recycled household waste is relatively low in the EU and varies greatly between EU Members, the Commission has proposed strict legislations to reduce the amount of waste disposed in landfills and incinerators. Moreover, this legislation emphasizes the strategies that need to be adopted in order to achieve the objectives regarding the recycling of packaging materials and urban wastes from industrial manufacturers. The methodology applied for the calculation of recycling rates has also been the object of revised legislation in order to increase the accuracy of statistical data and effective estimation of recycled material.

Assuming that recycling is an important process of waste management, the EU has undertaken several steps and commitments to help this process as well as increase recycling rates. At first, the Commission has introduced several promotional initiatives on waste collection and sorting. Also, it has

[16] Ibid

[17] On the implementation of circular economy action plan (9)

[18] Closing the loop - An EU action plan for the Circular Economy

been recognized that awareness campaigns and financial aids have proven to be successful in reducing household waste.

Through EU Cohesion Policy Funding, the Commission aims to improve waste management infrastructure in cases when the recycling rate capacity exceeds the number of facilities in hand. However, funding gives priority to sustainable waste management practices in the waste hierarchy; only on exceptional occasions, where the recycling of materials is not effective, funds will be granted for new landfill constructions. Illegal waste transportation across EU and non-EU borders has further decreased the recycling rates through uncontrolled waste treatment, which are mainly disposed of in landfills and incinerators. To prevent the flows of recycling rates, the EU has revised the waste regulation and imposed strict rules to tackle illegal shipments.[19]

However, not all waste products are feasible to be treated ecologically; therefore, the EU aims to turn waste to energy through a 'Waste to energy' set of actions that combine the EU energy and climate policy while the waste hierarchy is respected and recycling rates initiatives are not violated.

1.1.3 Waste to resource

Recycling remains at the core of circular economy, where wastes are reused as a resource to create a new product through recovering or dismantling; resource wastes are categorized as "secondary raw material".

However, the circulation rate of secondary raw materials in general remains at a low level within the EU (e.g. 5% of plastics), which depends mainly on waste management actions, trade conducting easiness, and the recognized quality standards of the wastes. To increase the availability and efficiency of secondary raw materials, the EU has proposed several measures aiming to stimulate the course of secondary raw materials in the market.

To increase the value of secondary raw materials in the market, the Commission has taken actions to set high quality standards and support trade between the Member States.[20] The revision of legislations on waste

[19] Closing the loop - An EU action plan for the Circular Economy (1)

[20] Circular Economy, closing the loop, from waste to resource (7)

management will determine whether the secondary raw materials are no longer considered as 'end-of-waste', which in turn will increase the safety standards of secondary raw materials and acceptance of recycled products.
Recycled fertilizers coming from food waste are particularly vulnerable to quality standards as they are directly injected into soils as nutrition for the production of organic products, while preserving the environment through substitution of mineral-based fertilizers. As such, the EU is working to improve the regulations on waste-base fertilizers to set widely recognized quality standards and establish a safety circulation in the EU-market.[21]
The reuse of water from treated wastewater is another alternative that falls under the category of secondary raw material. Bearing in mind that water resources are depleting over time, water treatment has become a necessity; it may find a wide application in agriculture which in turn comes in handy to stimulate nutrients recycling in the soil, and recovery of water resources through groundwater recharge. The EU Commission has revised the legislation over the requirements for water treatment to improve the water recycle in the most efficient method.[22][23] The revised legislation on water reuse, which was proposed in May 2018, has set ambitious goals that aim to increase the rate of the amount of treated wastewater from 1.7 billion m^3/year at present to 6.6 billion m^3/year by 2025, which will help to diminish the stress on natural water resources by 5%.[24]
Non-toxic materials in the frame of secondary raw materials are being treated carefully by the EU legislation on waste management as they pose risks to our health and environment. However, to encourage the circulation of non-toxic products by facilitating the flow restrictions and effective tracking of the chemicals, the Commission will review the legislation framework on wastes, products, and chemicals without compromising the safety of health and environment.[1]

[21] Ibid
[22] Ibid
[23] Closing the loop - An EU action plan for the Circular Economy (1)
[24] Water reuse, setting minimum requirements (27)

Formalities on trading secondary raw materials within and out of the EU have reduced at a certain level the smooth flow of and the demand for raw materials in terms of circular economy. However, to ensure an efficient circulation, EU has pledged to simplify the bureaucratic procedures, create an electronic data exchange platform and Raw Materials Information System.[25]

[25] Circular Economy, closing the loop, from waste to resource (7)

02. Albania

2.1 Circular economy in Albania

Regarding the situation in the Republic of Albania, the concept of 'circular economy' is still at an early stage. The concept of circular economy has been used earlier in the draft Strategy on Integrated Waste Management (2018-2023) produced in January 2018. The revised Integrated Waste Management Strategy is developed over the vision or perception of the concept of "zero waste", so that the waste is collected and treated as raw materials and management is done under the concept of circulatory systems, serving the criterion of use and preservation of raw material resources.

The main principle for waste management is the waste hierarchy (prevention, reuse, recycling, recovery and disposal). The draft Strategy takes into account the importance of waste management according to the principle of the current economy to enable the fullest protection of natural resources and increase the efficiency of the use of products. Currently, the Strategy is yet to be approved by the Council of Ministers.

In the Strategy Policy Paper and Integrated National Waste Management Plan 2020-2035[26] published by GIZ in collaboration with the Ministry of Tourism and Environment, the main aim, mentioned at the very beginning of the document is the transition from linear economy to circular economy.

This document develops on the vision or perception of the "zero waste" concept, that waste is collected and treated as raw material and management is to be done in accordance with the concept of circular economy systems, to benefit the standardized use and preservation of raw material resources.

The specific objectives of the Strategic Policy Paper aim to provide practical solutions in order to:

1. address issues in the current management system,
2. implement the legal framework in force and,

[26] The document of Strategic Politics and National Integrated Waste Management Plan 2020-2035

3. make the necessary preparations to meet the obligations arising from the amendments stipulated in EU Directives, including the ambitious objectives of the Circular Economy Package.

During 2018 and 2019, the European Commission held all the explanatory meetings on the memorandum of *Acquis Communitaire* for all the 33 chapters, in the framework of the opening of accession negotiations with Albania, approved on March 26, 2020. The explanatory meeting for Chapter 27 took place on 13 -17 May 2019 in Brussels.

Chapter 27 is one of the most important chapters of the EU *acquis* including 73 Directives and Regulations which constitute the legal framework of the EU in the field of Environment and Climate Change.

Chapter 27 is a cross-cutting chapter that includes a range of line ministries and independent agencies, which exercise powers in the field of environment and its respective subfields. All obligations such as reporting, policy planning, strategies and monitoring of their implementation is coordinated by the MTM in the capacity of the leading institution for this chapter.

The document states some actions about the need for every municipality to work on the construction of the schemes of differentiated collection of waste and design of plans on waste management and programs on waste prevention. Also, the document provides suggestions about the introduction of courses and educative content in schools by teaching special classes about the use and reuse of waste.

The current legal framework, including national regulations and national strategic documents and action plans, does not provide a basis for the implementation of the concept of circular economy in the country. Therefore, there is an urgent need for enhancements in the current legal framework that will increase the country's ability to better utilize its resources and the lifecycle of materials, products, and services.

Meanwhile, civil society organizations, researchers, and the media, but ultimately the Ministry of Tourism and the Environment have expressed their interest in this issue by organizing conferences, meetings and publishing articles in the media. However, their level of knowledge and awareness among all stakeholders is still at a low level. The purpose of this report is to

present an overview of the state-of-play of the country concerning the current economy and to support the efforts aiming to modernize the economy, making it more future-proof, green and competitive.

During this year the Co-PLAN Institute for Habitat Development organized the second regional Conference on Circular Economy, which was held in Tirana on March 5-6, 2020. In this conference analyses from each country in the region were introduced, followed by discussions of the European perspective, of challenges when it comes to the application of Circular Economy principles, and the role that needs to be played by municipalities to further promote this economic model.

After the welcome speeches by the Executive Director of Co-PLAN and the representative of the EU Delegation to Albania, part of the agenda were some important and interesting topics such as the EU New Green Deal by European Environmental Bureau and also the EU perspective on Circular Economy by Punto.sud.

The role of policy makers in promoting and applying Circular Economy principles was also discussed during the meeting, with the participation of representatives of the Albanian Union of Producers, Strong Municipalities Programme, representatives of Economy in Media and Resource Environmental Centre.

For the region, the representatives of each organization, part of the Env.Net project, made a presentation of their country with specific findings.

In the second part of the first day, there were two topics about the application of circular economy in practice which were addressed by both representatives of the Ministry of Tourism and Environment in Albania and from private companies with practical experiences.

Also, presentations came from the NGO part of the network about circular economy, sharing their experience and providing information on project implementations in Albania.

The second day of the conference was a field trip to a local business applying Circular Economy Principles and also a tour around an agritourism entity.

In this conference the Center of Competitive Skills (CCS) shared some preliminary findings of the study in the framework of the project 'Increasing

awareness of CSOs and SMEs on the importance of circular economy, in line with the EU Circular Economy Package' funded by the European Union.[27]
In January 2020, EDEN Center finalized the "Highlighting Circular Economy - as a new approach to an active society" project implemented through Co-PLAN, with the European Union funds, ENV.Net Factoring the Environmental Portfolio for the Western Balkans and Turkey in the EU Policy Agenda.
The project aimed to increase understanding and reinforce critical thinking about circular economy through practical model approaches to the daily life of cities.
A series of activities took place to achieve the goal of the project. A two days' workshop on Circular Economy, in the 'Map of Circular Economy in the City of Tirana' was held in Tirana, with the participation of organizations from different parts of Albania, businesses, etc., for a total of about 35 participants. It the end, the workshop finalized 4 ideas which were based on the concept of circular economy, and the best idea was implemented in 2 cities, in Berat and Shkodra by local organizations, namely "For social and environmental welfare", "Albanian Alps Alliance" and "Teuta Design ", Berat.[28]
On September 13, the Center for Competitiveness (CCS) organized an event in order to raise awareness and create a network of cooperation, under the project "Raising awareness of CSOs and SMEs on the importance of Circular Economy in accordance with the EU Circular Economy Package", funded by the European Union. The event was attended by representatives from academia, the private sector (businesses and chambers of commerce), civil society and state institutions.
A study was conducted by the CCS organization presenting the Research methodology about Public and SMEs, and reflecting the work done through qualitative and quantitative questionnaires, surveys or interviews, and also including a summary of Research Findings on Awareness Level.
According to this study 24 % of the public declared to be familiar with CE, but 15% have corrected information on CE as per definition. 51 % of businesses declared to be familiar with CE, but 44% have correct knowledge

[27] Qarkonomia 'Platform for the Circular Economy in Albania"
[28] EDEN Center

on CE as per definition. The main source of information for CE declared was Internet/Social Media, followed by Newspapers/Academic journals and publications, School/College/University etc. But, according to the survey question about the statement that applies to the CE, only 15% of the public have accurate information about circular economy. Regarding the familiarity with specific terms the results were 49% on Recycling awareness, 43% on Green economy awareness, 20% on Make-Use-Dispose awareness, 23% on Biosphere rules awareness, 15% on Blue economy awareness, 9% on biomimetics awareness and only 13 % of the public are familiar with Friday for future movement.

In the context of the two phases of circular economy, namely consumption to waste management, and waste to resources, the country is still facing difficulties with the transposition and implementation of EU directives related to waste management, water quality, and chemicals. The poor level of transposition and implementation comes mainly as a result of the lack of solid staff structure, capacity building and resources (financial and equipment). In some cases, there is still unclarified coordination between institutions (central or local) and agencies, which are in charge for implementing EU directives. There are several institutions, which have either appointed one person to address a certain directive or have not identified one yet; also, the limited information about obligations deriving from directives are not clear for representatives of municipalities and relevant experts. As such, the implementation process is undermined and fulfillment of deadlines is further delayed.

In Albania there are still no acts or dedicated legislation requiring a transition to circular economy, no subsidy or support for those who reduce, reuse or recycle waste.

Overall, the waste framework is transposed by local legislation at a level of 54% whereas in full we have transposed the 86/278/EEC Sewage Sludge, 96/59/EC PCB/PCT, 2006/66/EC Batteries, 1999/31/EC Landfilling and 94/62/EC Packaging. On the other hand, the implementation of our legislation is overall below 24% due to lack of investments, and lack of both human and technical capacities in place (at the local and central levels),

according to the recently approved new WM National Strategy. The term 'circular economy' can be found for the first time in an official document, but without any defined targets.

2.2 Quality of data

To apply and monitor the progress of circular economy of the country, accurate and easily accessible data is needed for each sector, mainly in the sectors that are essential to the development of a circular economy. The most important data consist of resource utilization, design, producing and consumption of products, waste generation and treatment, recyclable raw materials and initiatives with focus on competitiveness and innovation.

Generally, the data are scarce, non-representative and published with annual narrative reports in which it is often impossible to process statistical data from them. INSTAT has created a good database, but remains few and in some cases contradictory with other institutions that publish data of the same type.

The data are mainly extracted from local municipalities and the National Environment Agency. At present, the approximate amount of generated waste is measurable only in 3 landfills which operate through weighting of waste loads; the rest runs through counting the number of loaded waste containers entering the landfill. Unfortunately, there are no accurate data on the amount of waste generated since there does not exist any study providing reliable data over the rate of generated wastes per capita; this is also due to the lack of accurate data on population number where different institutions publish different figures for the same region.

Recent developments in the waste management sector have been focused on the implementation of by legal acts and on the improvement of strategic documents. The National Waste Management Strategy 2018-2033 aims to establish a minimum standard on waste management in the country's territory and establish a unified methodology to evaluate the costs related to the provision of the integrated waste management service. The adoption of the National Integrated Waste Management Strategy and its

implementation is assessed as a key step in improving the waste management situation in the country.

In general, the situation of integrated waste management in the country appears to be extremely problematic. Currently, about 69% of the population receives waste management services; only 30% of waste is dispatched to the landfill, while the rest are disposed on inadequate deposit sites. Regarding the infrastructure and type of landfills, there are no landfills designed to meet EU standards. Most of the waste is deposited on local and illegal landfills. Meanwhile, three incinerators are being built in the Municipality of Tirana, Elbasan and Fier.

Recycling companies in the country have reduced processing capacities, and in 2019 about 38 companies, recycled 4.5% of the total amount of waste, and their number and processing capacity is now somewhat unclear.

2.3 Circular Economy initiatives in Albania

During the recent years, several business companies in Albania have shifted their business activity towards the circular economy concept, by applying efficient waste management practices and turning waste to resources. This trend has not only benefited their revenues but also has had a positive impact on creating local jobs and preserving the environment. The following paragraphs will show some of the companies, which have embraced the concept of sustainable waste management and treatment.

I.N.C.A Nordfish Sh.p.k.

Established in 2004, the company is known for processing products of animal origin (cattle intestines). It was presented as the only producer of Natural Casing and animal byproducts in Albania.

As the only company of its kind in Albania and the Balkan region, it supplies with products large companies in the country and region, which are specialized in the treatment of meat and sausage products. A considerable part of the revenues is invested in the development of treatment technology, which in turn has increased the volume of production. Currently, the

company is employing about 110 workers, which will be doubled in the near future.

However, to avoid the economic loss from the products which do not meet the clients' requirements, faulty products are further recycled through technological processes. After being processed, the products are exported elsewhere in Europe as food for animals under the EU standards.

From 2008 to 2015 they had a linear approach about manufacturing and distribution of natural casing through importing raw materials.

From 2017 they went towards a Circular Approach, thus investing in casing cleaning machineries and collecting and processing 5 tons/month of Albanian casing for the Albanian market. During this time 5% of organic waste disposed by the slaughterhouse was reduced.

Further on, from 2017 to 2018 they started to collect and recycle the entire intestinal tract and to export Albanian products to a lot of European countries.

After 2018, they went to a fully circular system by investing in a new pet chews production facility, new mucosa treatment plant destined for pharmaceutical industry, recycling 40-50% tons/month of organic animal by products. They reduced the organic waste disposed by slaughterhouses and their own company by 30% and continue exporting to EU countries and other countries worldwide.

In 2020 they invested in the only rendering plant in the Western Balkans area, recycled 200 tons/month of organic waste created by the food industry and reduced all organic waste disposed in Albania by 98%.

Agrimona

It is an environmentally friendly initiative (organic shop) with the mission to contribute to social impact in a financial sustainable way, with all profits dedicated to the social mission. Their social goals are to: promote development of high quality loal and traditional Albanian food products; support smallholder products and remote areas; promote customer education on healthy nutrition and environmental protection. They aim to reduce waste and pollution by short term inventory and reduce food waste;

paper packing and unpacked products; promote natural production techniques; promote reusable shopping bags; buyback used jars and bottles.

City Tex

The CityTex garment factory was just an idea in January 2016, a plan by March, and, during April through June, made its first investment, registered as a new business, and trained their employees. In July, the factory tested products and conducted advanced training. By August, the factory had hired 60 women from the community, all with new skills and salaries designed for the long term.

Like a traditional business, the company produces a product or service that meets a need in an identified market, and then sells it for a profit. As a social business, though, it not only makes a profit, but invests back into the community or works to lift a marginalized sector. Ideally, there are prospects for future growth and shared profitability (actually they helped more than 50 rural women working in the textile industry). USAID's support of CityTex is part of its Growing Social Businesses in Albania project, which is designed to promote entrepreneurship and the development of social businesses in vulnerable and underserved communities in order to generate lasting and positive social, economic and environmental impact in a financially sustainable way.

KeBuono

KeBuono is the only confectionery in Fier where the quality and tradition of Italian confectionery meet the values of legality and social inclusion. KeBuono is an initiative promoted by the ENGIM associations and the Murialdo Social Center. It is the first social enterprise in Albania rebuilt on a property confiscated by the property administration agency, building a strong bridge against organized crime.

Through various activities where the subject is involved, the aim is to inform young people and citizens about violence, the law against violence, addressing it in relevant institutions.

Banners, flash mobs, symbols are used to convey messages against violence and to show support for the victims affected by violence, but also to raise awareness about other sensitive causes for the society.

Kinfolk Coffee Library

Kinfolk Coffee Library is a social enterprise, an initiative undertaken as a measure to prevent the involvement of young people in crime in the city of Durres. The first social enterprise set up in the city of Durres on a property confiscated from organized crime.

This enterprise also works as a social gathering facility for young people in Durres Municipality, offering them a possibility to express themselves and be part of awareness campaigns.

Social Crafting Garage Saranda

This social enterprise was created by the Institute for Migration Development and Integration, with the financial support of the European Union through the CAUSE project "Use of confiscated properties for social enterprise". This organization helps the women of the region to produce handicrafts, mosaics, etc. aiming to create some know-how and independence, to meet their basic needs and ensure a better future.

Albkalusyan

As a leader in the market, the company is specialized in the field of medicinal herbs treatment. The company collects about 26 kinds of medicinal herbs and processes oil extractions, which are exported abroad. However, at the end of treatment process, a vast amount of plant wastes such as stems and sludge are left behind. In order to make use of wastes, the company has embraced the 'turning waste into resources' approach; through technological investments, the plant wastes are carefully treated to generate steam, which fulfills the company needs for energy consumption.

EuroElektra

EuroElektra company has been operating in the electric and photovoltaics sector for more than 10 years now. They promote the socio-economic impact and benefits of photovoltaic plants. By implementing these systems for energy production, they provide reduction of CO_2 gasses emission, reduction of the electricity bill, reduction of environmental impact, better income for the country and safe investments. They have implemented more than 30 photovoltaics implants during these years.

Aiba Company

Established in 1993, Aiba Company is a leader in the field of cattle food production, breeding and growth of chickens for meat consumption and eggs production. The amount of eggs produced annually reaches around 100 million per year, which in turn generates about 40 tons of waste due to excessive moisture. Nevertheless, Aiba Company has invested in technology that reduces the moisture and benefits about 20 tons of soil fertilizers per day. The end product is compressed in packages and sold to farmers for the production of agricultural products. Also, Aiba company is investing in creating a new system that will make the drying of waste possible. It will improve the quality of fertilizers, ensure better environmental conditions and a higher quantity of products for selling.

GER.ARD Sh.p.k.& IB Recycling

The main focus of the activity of GER.ARD Company is on the dismantling of old or damaged vehicles, trading of spare parts as well as import and export. IB Recycling, in partnership with GER.ARD Company, offers recycling services of vehicles parts and electronic devices. Thanks to its advanced technology, the company can turn wastes into resources for manufacturing of other products. Computer devices and catalytic parts of vehicles are efficiently recycled and then exported to EU countries.

Pastrimi Detar Sh.p.k (Marine Cleaning)

The company focuses on the marine cleaning of the port, particularly in Durres, from the wastes released by ships. At the moment, the company owns a plant where hydrocarbons released from fuels are separated and then exported to EU countries. In the framework of 'returning wastes into resources' approach, the company has recently invested in building a large station with reservoirs and pipelines, which will treat the seawater contaminated by ships anchored in the port of Durres. The oil extracted from this process will then be sold in the market.

Soap production

Soap production is a project initiated by the EU, which takes place in the city of Roskovec located in the south-central part of Albania. The city is known for being rich in olive trees, generating large amounts of olives and extracted

oil for trade purposes. However, the oil extraction process leaves behind considerable amount of organic sludge. The project aims to refine organic waste into organic soap, which benefits both the environment and the social economy of the region.

Pana – Storytelling Furniture

Established in April 2013, the company focuses both on the design of furniture via Architecture and Furniture Industry, and social integration of craftsmen that can contribute to the development of the company. The company operates through two business processes, projection and production. The former takes place at "Pana Studio", where potential clients are assisted to shape their ideas into conceptual projects; while production is realized at "Pana Storytelling furniture", which enables to bring project designs into life. Based upon client needs, be it restaurants, bars, shops, etc., the company offers products through the reuse of wood material, which is already on the market either disposed as waste or wood for burning, and iron skeletons to frame the furniture.

1 Mar, 1 Mrapsht

This exclusive enterprise offers unique products which reflect the Albanian traditional style of dress, jewelries, and other home accessories; the clients, Albanians or foreigners, do not only take with them the product but also a piece of Albanian culture. Unlike other boutiques selling imported products, most of the shop's products are handmade from skilled artisans who use local first-hand materials.

Agricultural products initiatives

Over the recent years, agricultural initiatives have been developed increasingly in the market by promoting agricultural products and services in different shapes, be it shops, restaurants, deliveries, etc. The focus of these entrepreneurs is to offer domestic products which either grow them in the backyard, as it happens with restaurants, or collect them from local farmers who provide seasonal products of high quality as it is the case in shops.

Some of the well-known restaurants in the country that serve local food are "Uka Farm", "Mrizi i Zanave", "Agroturizem Huqi", "Ferma Albanik" etc., which

are located in remote areas where it is possible to build their own farms and obtain additional products from other farmers without additional cost in transportation.

On the other hand, there are several shops selling local agricultural products collected from farmers from different localities; just to mention a few, "Ferma Jone", "Agrimona", "Zepa Natyral", etc. This way, not only do the local products prevail over imported ones, but they also help in the economic development of rural areas.

During December 2020, from the Environmental Council of Tirana, a group of professionals in environmental, climate, urban planning and energy issues, brought together voluntarily, was organized an online meeting about the new initiative of Tirana Municipality on "Green Business Grant Tirana".

During this meeting was discussed about the grant that will be disseminated to the green businesses (start-ups or existing ones).

Any project that has access to reduce environmental pollution, installation of new technologies environmentally friendly, adaptation of renewable energy to business needs, etc. will be subject to financial support from the grant of the municipality of Tirana.

2.4 Findings

The evaluation of the current status of circular economy components in Albania is based upon the structure of the Monitoring framework and indicators put forward by the EU. As such, the assessment criteria are grouped into four phases: 1. Production and consumption, 2. Waste management, 3. Secondary raw materials, and 4. Competitiveness and innovation.

2.4.1 Production and consumption

Regarding the development trend of production and consumption under the scope of circular economy, Albania has shown little progress in minimizing waste generation. When expanding this phase, the four indicators described in the monitoring framework will be further elaborated below.

As described in the view of circular economy, the self-sufficiency indicator expresses the dependency of the production line of new products and services on raw material.

Judging from the progressive trend of the flow of goods in foreign trade for the period 2015-2019, Albania falls in the category that relies mainly on imported products. The data from the Institute of Statistics show that in September 2020 the flow of goods was 25 billion ALL, increasing by 1.2 % compared with the same period of previous year, while in 2019 it fell by around 4% compared to 2018. On the other hand, import has increased constantly from 2015-2019 by 19%.[29] The value of imports increased by 0.3% compared with the same period of the previous year. In the first nine months of 2020, the value of exports decreased by 13.6 % compared with the previous year and the value of imports decreased by 10.9 % compared with the previous year.[30]

Regarding energy production, as a country rich in water resources, Albania uses hydropower plants for electricity production. Although the energy generated by hydropower is considered as 'clean' but dependent on weather conditions, the amount of energy production varies accordingly. Based on the statistics for 2019, the amount of net domestic production of electricity decreased by 39.1%, reaching the value 5,208GWh, compared to 2018 for the same period, which was 8,552GWh. Therefore, the gross imports of electric power increased about 1.8 times, while the gross export of electricity decreased by 3.5 times.[31]

According to 2019 statistics from the Institute of Statistics, there were about 1.2mil. ton of urban waste generated, where the dominant constituent is organic waste which counts for about 58.4% of total waste. The rest is a mixture of wood, paper/paperboard, glass plastics, textile, metals, etc. listed in a descending order. The major waste generators include oil industry, cement production, steel and mining, and households.[32]

[29] Albanian Institute of Statistics, "Flow of goods in foreign trade, 2014-2018"
[30] Albanian Institute of Statistics
[31] Balance of electric power 2019
[32] Ibid

In the context of food production, waste is inevitably created from the starting process of food making until its delivery. Most of the food waste comes from home cooking, restaurants, catering and retail stores. Once food turns into waste, all the resources that were used for production, namely water, energy and limited environmental resources are all wasted. This trend of food misusage contradicts the principles of circular economy. Since the data on generated wastes is not available at the current state and given the variability of waste generation sources, it is difficult to manage food waste effectively, which would benefit both social finances and environment.

Green Public Procurement (GPP) has a significant role in fostering circular economy at local and central levels by purchasing goods and services that help to develop a more sustainable production and consumption without causing harm to environment. Unfortunately, there are no statistical data to be found whether Albania has embraced the GPP approach; however, considering the relatively significant weight that public procurement has on GDP, its application will be a step forward for transition towards circular economy. In turn, it will boost the production for environmentally friendly products and services in the domestic market.

2.4.2 Waste management

Sustainable waste management in Albania remains at a relatively low level, with urban waste management services only covering about 87.9% of the resident population, residing mainly in urban areas (referring to statistics in 2019), thus marking an increase by 22.2% compared to the previous year.

The government, through the National Territory Council, has approved the National Plan for Solid Waste Management[33] on 1st of January 2020.

The plan mainly focuses on ensuring sustainable services for Solid Waste Management within all the country, reducing and recycling all the waste fractions, reducing the number of uncontrolled and not sanitary deposits/landfills and also environmental protection.

[33] National Plan for Solid Waste Management

Like in the previous strategy it also focuses on the standardization of national waste management directives in compliance to EU legal framework. The strategy ambition is taking measures to protect the environment and human health, through commitment to shift its policies towards sustainable waste management, finance the efficient waste management practices, and boost the separation of waste streams in source and stimulate business to recycle and minimize waste production[34].

Regardless of this forward initiative, there is a big discrepancy between the goals set in the strategy and the reality, because most of the goals were very ambitious and currently the development has clearly lagged far behind the agreed targets. Albania lacks the plan and infrastructure to manage wastes in an environmentally-friendly manner by reducing, reusing, separat collection of waste materials and recycling, regarded as the most ecological practices determined in the waste hierarchy pyramid. The general trend of waste management is by depositing them in landfill sites (run by the municipality and illegal ones), burning them in the open air (mainly household wastes) and incinerators. [35][36]

According to the EU delegation in Tirana, investing in incinerators could delay the implementation of directives and policies required by the European Union and make it more difficult to meet the necessary objectives. Investing in lower levels of the EU waste hierarchy may delay the implementation of the Waste Framework Directives and its policies and make it more difficult to meet EU recycling targets.

Closing landfills and dumpsites is also a challenge. A specific collection of waste types and economic mechanisms to promote recycling and reuse as well as to prevent waste generation remain limited.

The issue of incinerators is highlighted in the Progress Report published during October 2020. The report states that not only is "closing landfills and

[34] Municipal Waste Management (18)

[35] Ibid

[36] 2019 Communication on EU Enlargement Policy – Albania Report (19)

multiple landfills out of standard" a "challenge", but that there is a limited amount of alternative options. for waste disposal and recycling.[37]

Based on 2019 statistics, the total amount of urban wastes generated reached about 1.2mil tones, marking a decrease of 18%, compared to 2018, where around 78% of them are disposed of in landfill areas. Unfortunately, most of them are illegal and do not meet the minimum standard requirements for waste storage and environmental prevention from pollution such as leachate and gas.[3839] This comes due to the poor choice of waste disposal sites (nearby rivers, urban areas, agricultural lands, etc.), discarding solid and untreated waters into the rivers and lakes and unrestrained measures to limit the emission of gases when wastes are burnt in open areas.

In 2019, around 1.08 mil tones of urban waste were managed, resulting to 381 kg/inh compared to 462 kg/inh from the previous year.

Although there has been some minor effort from municipalities to maintain a cleaner environment, it is the poor infrastructure of dumpsites, insufficiency of waste collection vehicles and weak law enforcement that hinder the improvement of the situation. To close these dumpsites, the government has planned to build 12 regional controlled landfill areas (based on DCM no.389, 2018). However, it comes into attention that the closure of illegal dumpsites still presents a risk to the environment, if the rehabilitation process is not performed in compliance with the requirements set in the feasibility study projects.[40]

In addition to building new landfill areas, the government is heavily investing in the construction of incinerators which will be used to burn municipal wastes. In Tirana, which withholds the largest amount of urban solid wastes, the landfill site is under maintenance as there is about to be built a new incinerator. However, there are concerns among community, civil society, and environmental organizations whether such practices align with EU

[37]COMMISSION STAFF WORKING DOCUMENT Albania 2020 Report

[38] Ibid

[39] INSTAT

[40] Vleresimi Strategjik Mjedisor per pergatitjen e "Studimit te sektorit mbi nevojen per investime ne menaxhimin e integruar te mbetjeve te ngurta (MIMN) ne Shqiperi" (21)

framework on waste management, complying with waste hierarchy and cost estimate feasibility. Even though the incinerators have been part of the strategy plan, it has also been recognized the negative impact they have on human health and environment. This assessment comes into agreement with EU waste management directives, which considers the incinerator construction as the last resort to be deployed, in case other waste management methods are ineffective.

At the moment there are 2 large capacity incinerators under construction (in the municipality of Tirana and Fier), while the one in Elbasan is fully operational and incinerates 122,994 t/year out of 470,000 t/year capacity. However, to make them fully efficient and feasible, the technology applied must be of a cutting edge and the amount of waste to be burnt must exploit the full capacity of incinerators. Specifically, the total treatment capacity of three incinerators of Tirana, Fier, and Elbasan is way above the overall waste volume designed for burning, with the latter reaching only 26% of the full incinerators' capacity.

This practice contradicts the goals of the National Strategy on Waste Management, which aims to increase recycling capacities by 50% in 2020 and up to 75% by 2025. From the risk assessment point of view, unfortunately, Albania does not have enforced regulations on controlling the amount of nanoparticles chemicals emitted in the atmosphere from incinerators, which makes it even more difficult to evaluate the negative impact they pose on human health and environment located nearby. [41][42][43]

Considering that the government has given priority to construction of landfills and incinerators, there is little effort and allocated financial resources to create recycling plants, which reflects the small percentage of recycled wastes compared with the total waste amount[44], 18.7% (in 2019), with a difference of only 0.2% compared with the previous year (in 2018 18.5% of waste was recycled). The low level of recycling and differential waste

[41] Ibid

[42] Municipal Waste Management

[43] National Strategy for Management of Integrated Waste

[44] Institute of Statistics, "Urban Solid Waste"

collection lead to the loss of potential valuable natural resources, negative impact on the environment and increase of the amount of waste needed for disposal. This poses a challenging task for Albania to fulfill its commitment determined in the National Strategy on Waste Management and comply with EU *acquis*. Currently, there are only a few recycling facilities that process glass materials, paper, and cardboard, aluminum, steel scrap, etc.

Eco Tirana was established more than 4 years ago, as a collaboration initiative between AGSM Albania and Tirana Municipality, with the main focus on collection of differentiated collection of recyclable materials. By June 2017, half of Tirana should have accumulated waste in a differentiated way and the rest would be covered by June 2018. So far, this collection is still challenging due to the high percentage of final waste in recycling containers. Changes to the system are planned to improve separation of waste from families but still there is no concrete plan about this.

In Albania most facilities belong to persons who collect recyclable materials. Some other activities for the collection of recyclable materials take place formally. For example, in Lezha there is a recycling cooperative that cooperates with the municipality and collects recyclable materials from shops and offices. In Shkodra the obligation for the distribution of recyclable materials is included in the service contract for the private waste collection company. Furthermore, in some cities recycling companies collect recyclable materials directly from businesses or offices.[45]

In 2013, Albania also drafted the law on integrated water management, which, according to the EU report,has found little application. The 2019 progress report found that there were discrepancies with the EU directives on urban waste water treatment, drinking water and groundwater, and deficiencies in the regulation to enforce the implementation. The report stresses that the sewage system and water treatment facilities must extend to serve a wider area of urban population and particularly coastal cities. In the meantime, a number of existing waste water treatment facilities require rehabilitation to make them more efficient.[46]

[45] National Sectorial Plan for Solid Waste Management Albania 2020

[46] 2019 Communication on EU Enlargement Policy – Albania Report (19)

The 2020 progress report mentioned that the 2019 recommendations remain valid. The report mentions that Albania shows some level of preparation but limited progress was made for further aligning the policies and legislation with the acquis, in some areas including waste management and it recommends to accelerate capacity development for national agencies including Sewerage and Waste[47].

The report mentions the fact that the new approved 2020-2035 national strategy for integrated waste management aims to incorporate circular economy principles in the national waste management system. Closure of non-compliant landfills and dumpsites is still a challenge as it is the separate collection of waste streams and economic instruments to promote recycling and reuse and to prevent waste generation.

Based on the World Bank paper on 'Albania Water Supply and Sanitation Sector Financing Strategy', it emerges that only 63% of the population residing and working in urban areas are covered by a sewage system. There is a considerable difference between urban and rural areas, because the sewage system coverage in rural areas is almost negligible, only 6% of the population is provided with this service. Until 2017, in Albania were constructed 12 wastewater treatment plants, which serve the population in urban areas. So far, no plant has been constructed to treat wastewater in rural areas. Also, during 2018 and 2019, none of the 61 municipalities received funds for the construction of wastewater treatment plants. Concerning Directive 91/271/EEC On Urban Waste Water Treatment, there is no new development with regard to its transposition.

2.4.3 Secondary raw materials

The usage of secondary raw materials accounts for a low or insignificant number of materials used for making new products, considering that the amount of recycled and reused wastes constitutes a small portion of the total waste volume. Currently in Albania exist about 60 recycling companies

[47] 2020 Communication on EU Enlargement Policy – Albania Report

spread throughout the country, with a total recycling capacity rounding at 500,000 tones. Most of the recycled/separated at source wastes include glass bottles (reused for beverage companies), paper and cardboard, steel scrap (processed in the metallurgical plant of Elbasan), etc.[48]

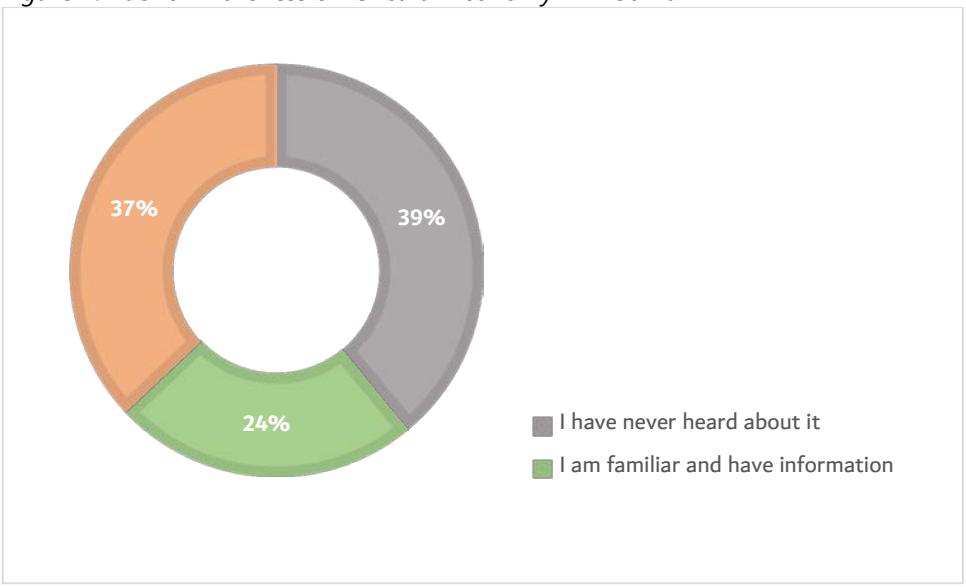
2.4.4 Competitiveness and innovation

In the spectrum of a circular economy, there are not any explicit data from any reliable sources, which reflect the development of competitiveness and innovation between the companies aspiring to offer products and services of the same nature. The only development to be mentioned is related to the investment in technology that the above-mentioned companies have put in place to enhance their production line and manage waste treatment. Judging from the number of circular economy nature initiatives, it is believed that Albania is at an early stage of ensuring competitiveness and innovation to push forward the sustainable processes of all elements included in the loop of circular economy. The Institute of Statistics possesses data obtained from the analysis of innovative contributions from small and medium companies, particularly in the field of technological information services, telecommunication and the production of optical, electronic and computer devices.

However, on behalf of a study report on Circular Economy Awareness & Sensitivity Among General Public and Businesses implemented by the Center for Competitive Skills in Albania, have been conducted quantitative questionnaires aiming to collect information among public and businesses on how familiar are with the term of 'circular economy'.

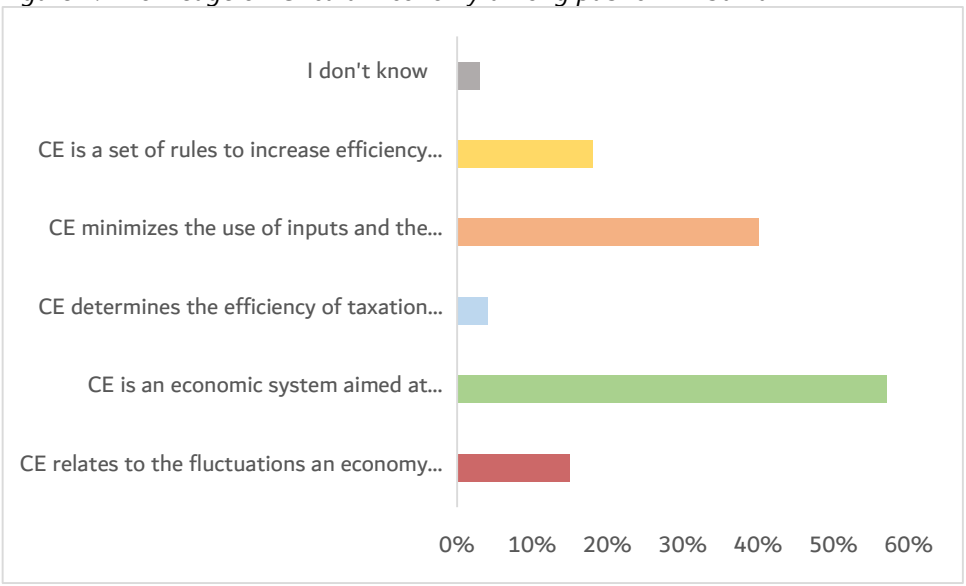
[48] Municipal Waste Management (18)

Figure 1. Public Awareness on Circular Economy in Albania



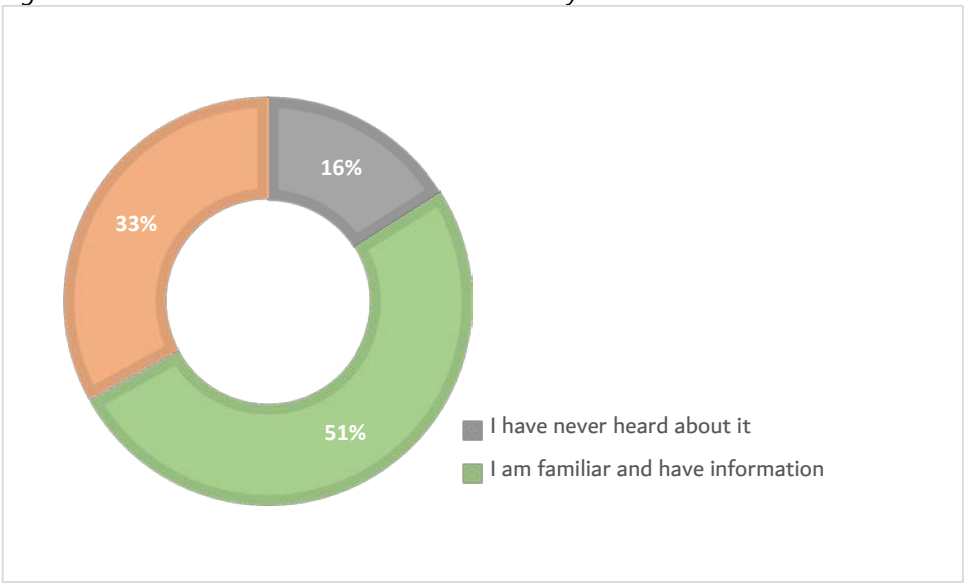
**Source: Study Report on Circular Economy Awareness & Sensitivity among General Public and Businesses (2020)*

Figure 2. Knowledge on Circular Economy among public in Albania



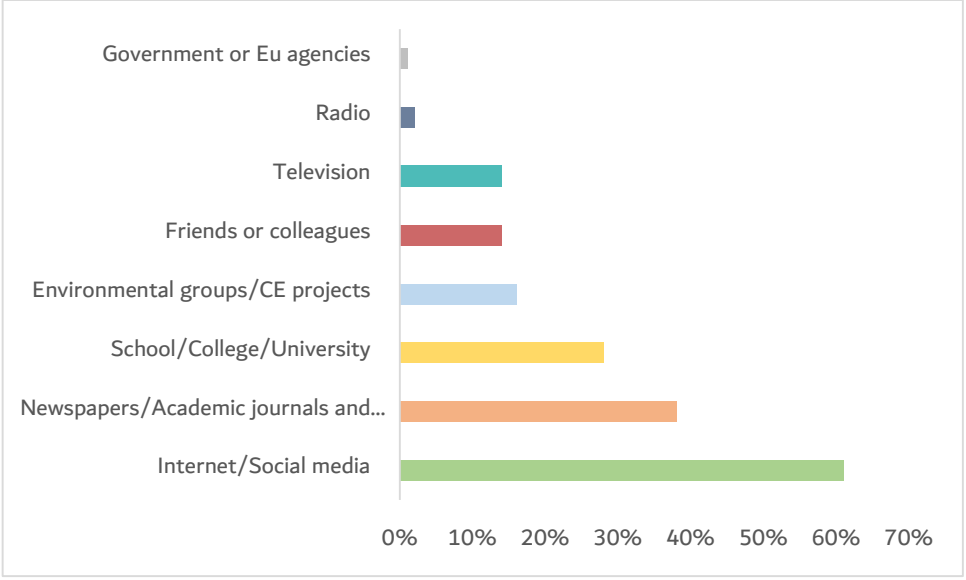
**Source: Study Report on Circular Economy Awareness & Sensitivity among General Public and Businesses (2020)*

Figure 3. Business Awareness on Circular Economy in Albania



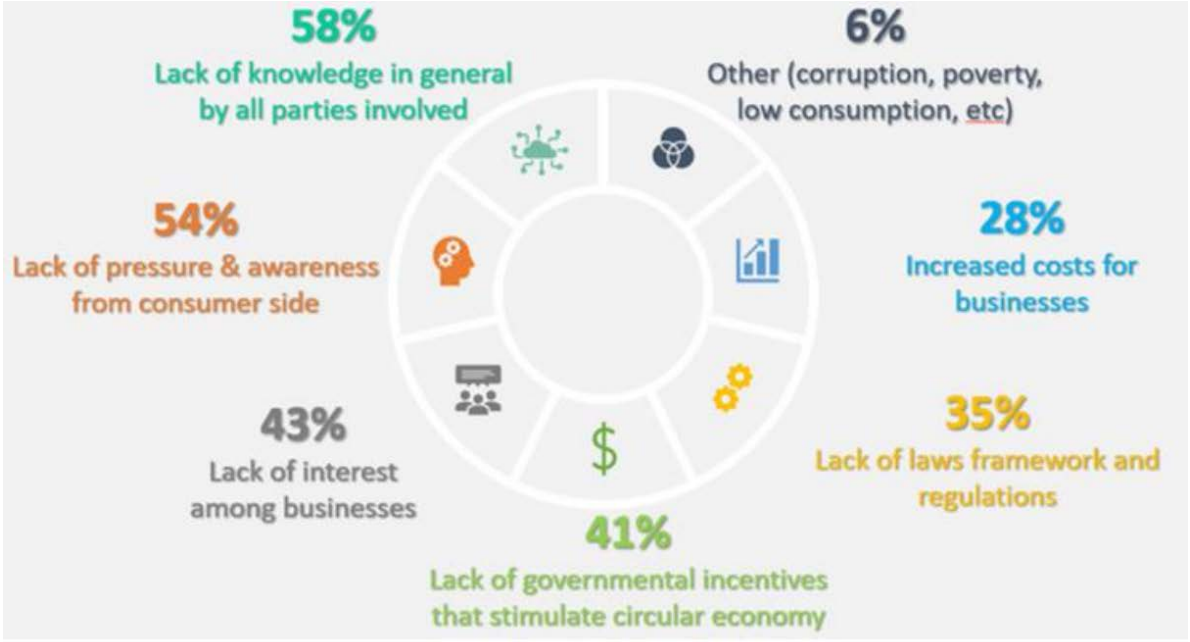
**Source: Study Report on Circular Economy Awareness & Sensitivity among General Public and Businesses (2020)*

Figure 4. Source of Information among public in Albania



**Source: Study Report on Circular Economy Awareness & Sensitivity among General Public and Businesses (2020)*

Figure 5. The main barriers of Circular Economy in Albania



**Source: Study Report on Circular Economy Awareness & Sensitivity among General Public and Businesses (2020)*

Figure 6. People's willingness to pay more for better purchases in Albania

Figure 7. Business perception on costumer's willingness to pay more for better purchases in Albania

2.5 Concluding notes

The principles of circular economy are referred to in the draft National Strategy for Integrated Waste Management (2018-2023) in Albania and also in the document of Strategic Politics and National Integrated Waste Management Plan 2020-2035 with the aim of transitioning from linear to circular economy.

In the National Sectorial Plan for Solid Waste Management (Sectorial

Strategy) 2020, the concept of Circular Economy is not mentioned thus indicating a lack of attention in this area.

Addressing circular economy only through waste management issues shows that the concept of circular economy is still in its early stages. Although there has been some progress as compared to last year on behalf of private business companies to move their activity towards circular economy through waste management and waste to resource phases, there is still a lot to be done by the central government or local municipalities to embrace the circular economy approach and impose strict regulations on waste management. Unfortunately, considering the latest waste management plan, the government is lacking the will to reduce the amount of waste by respecting the waste hierarchy steps, for most of the budget is poured into building incinerators and landfills. Ensuring a successful transition to circular economy, however, requires efforts on many different fronts; circular economy goes beyond waste management.

Putting forward the implementation of circular economy practices in the Albanian market, there are a number of processes that all the involved stakeholders must be committed to, including here the key player, the

Albanian government. Said that, below are listed some recommendations that must be considered by the governing authorities, be it central or local:

- The closure of illegal and poor landfills that do not fulfill the minimum requirements for environmental protection;
- Provision of economic incentives for producers who bring green products to the market and which support recycling and recovery schemes (e.g. packaging, batteries, electrical and electronic equipment, vehicles) and stimulate 'Green make' innovations on goods and services;
- Developing sustainable policies towards waste treatment while respecting waste hierarchy;
- Reducing the investments on building new landfills and incinerators, which are to be considered as the last choice after all waste treatment methods have been exploited;
- Drafting regional and local plans in favor of waste integrated management;
- Institutional coordination over the management of urban/hazardous wastes;
- Raising economic investments and law enforcement towards a more environmentally friendly waste production and management;
- As a major consumer, public authorities must adapt to the Green Public Procurement (GPP) approach as much as possible, by choosing to purchase goods and services which are environmentally friendly throughout their lifecycle;
- Guarantee participation in Horizon 2020 and prioritize investment seeking to boost innovation and competitiveness;
- There is no integrated approach to the country. It is therefore recommended that Albania has to transpose and implement EU directives related to the current economy;
- Launching education programs, mainly at preliminary school level, to involve the citizens in the waste management operations and the achievement of circular economy.

03. Bosnia and Herzegovina

3.1 Circular Economy in Bosnia and Herzegovina

Circular Economy (CE) has been introduced in the recent years in Bosnia and Herzegovina. Since the European Green Deal and Green Agenda for Western Balkan was presented, BiH started to move forward in that direction, because of the pre-accession interest to become an EU member.

The CE is recognized as a model that supports sustainable development, rather than the recycling itself presented in the last decades. In Bosnia and Herzegovina, the concept became "more alive" after being presented by LIR through ENV.net project, and by various experts previously dealing with waste management issues.

Environmental experts, waste management experts, socially responsible companies recognized this model and started to promote it more widely, and considered it for the improvement of their work and their positioning in national and international economy.

Following the publication of the European Green Deal, which underlines the need for the Western Balkans to engage in the decarbonisation pathway, the Secretariat and Berlin-based Agora Energiewende proposed a set of specific measures and proposed the development of a national energy transition roadmap, which includes:

- Introduction of carbon pricing and regionally coordinated price of CO2 emissions, compatible with the EU ETS;
- Plans to set concrete dates for phasing out coal-fired power generation in line with commitments under the Energy Community Treaty and the Paris Agreement;
- Regulatory, administrative and financing frameworks to enable a massive and rapid scaling of renewable energy sources and energy efficiency measures; and
- Cooperation to make the best use of the highly interconnected transmission infrastructure within the Western Balkans and with the EU and tap the potential for creating one integrated power market in the region.

The document underlines the unique opportunity to take advantage of the political momentum of the European Green Deal and final negotiations on the EU's budget to link concrete commitments by WB6 leaders with concrete pledges of the EU and some EU Member States to offer financial, administrative or technical support for a just transition. The Green Agenda for Western Balkans was developed and presented. LIR Evolution is part of the ENV.net and SEE networks, through which proposed actions and recommendations for the document "Joint civil society statement in the wake of the Sofia Summit" were prepared and submitted to the Heads of WB governments and to the EU Commissioners in charge of the Green Agenda for WB.

For centuries, the world economy has been based on a production that has led it to consume and exploit resources. For decades, leading economic experts have been discussing new models by raising awareness of the importance of resources and their reuse in production processes. This is the basis of the circular economy model, with experts defining it as an economy that changes the way of production.

The importance of this model is evidenced by the fact that the European Commission adopted an Action Plan for Circular Economy at the beginning of the year 2020, which further emphasized the development opportunities provided by this model.

Project partners of ENV.net project met in Tirana on 5- 6th March, 2020 to present in a CE Conference the developments made in the sector of circular economy in each country: Albania, Bosnia and Herzegovina, Montenegro, Serbia, North Macedonia and Turkey. On the first day of the regional CE Conference, supporting partners from Italy and Belgium held their presentations as well. During the second day two visits were organised in entities that represented best practice examples in Tirana, Albania. The site visits were held at Albkalysian producing essential oil, and UKA farm. Both best practice examples presented their work as waste free businesses, which is in line with CE practice.

The project partner EEB organized an online event entitled "New momentum for the environmental agenda in the Western Balkans & Turkey" in October, 2020, following the European Green Deal, and the presentation of the EU Green Agenda for the Balkans. Environment and climate are top political priorities within the EU, and are also seeing increased attention in the external dimension, in particular in the EU's work with the candidate countries in the Western Balkans and Turkey and in its partnerships such as the Eastern Partnership. The increased attention on environment comes with new opportunities to push for better environmental protection, stronger environmental governance and improved environmental justice. The online conference thematically covered discussions on new opportunities to work for the environment in the Western Balkans and Turkey, opportunities as environmental CSOs. Since 2012 upon the establishment of the ENV.net as a regional network of environmental CSOs in the Western Balkans and Turkey, all these project actions showed that the network has become a leading pan-regional actor when it comes to the impact on the development of environmental laws and policies in the region and the alignment with the EU environmental *acquis*.

3.2 Quality of data

Public bodies which provide data are: the Ministry of the Environment and Tourism of the Federation of Bosnia and Herzegovina, the Ministry of Physical Planning, Civil Engineering and Ecology of Republika Srpska and the

Government of Brčko District, as well as local-self-government units (city, municipality, and related institutions).

Statistical data are produced by the Agency for Statistics of Bosnia and Herzegovina (BHAS), based on a memorandum of cooperation between entity statistics institutions. The full set of annual energy statistics has been compiled and transmitted to EUROSTAT following the defined procedure although with considerable delay. Information is collected, analysed and synthesised for the following data: demographic and social statistics, business, agriculture and forestry, transport, environment and energy, science, technology and digital society. In 2020 the data from 2019 were analysed (e.g., Cross-border traffic non-dangerous waste, waste recovery and disposal, utilization and protection of water against pollution in industry, waste from production activities, expenditures for environmental protection). The quality report for annual statistics was transmitted to EUROSTAT.

BHAS started to compile monthly reports for electricity and coal, but monthly oil and natural gas data are still missing. The prices of electricity and natural gas charged to industrial and household end-users, broken down per consumption band and per taxation level, as well as the breakdown of components of electricity and natural gas prices, are compiled and submitted to EUROSTAT. National statistics institutions have to pay special attention to meeting the quality related requirements, including the completeness, timeliness, quality reporting and revision policy. Completing monthly data, primarily oil, requires urgent action. There are laws and rulebooks, but there is no consistency in waste collection, proper disposal and treatment. Numerous activities were implemented in schools and in larger BiH cities, where separate waste collectors were set up (specific containers for plastic, paper, glass and metal), but the waste truck collected separate waste all in one collector of the truck, and drove it to the same waste disposal site. Several best practice examples exist (mentioned below in text), the companies that collect and export waste. In BiH waste is still not seen as resource.

It is foreseen to develop the Fourth cycle of Environmental Performance Reviews by UNECE in 2022, for countries in the pan-European region. The

countries will be reviewed for progress and focus on environmental governance and financing, domestic-international interface, media and pollution management, and integration of environmental into selected sectors and SGDs substantive content. EPRs-4 will continue to be taken in a flexible manner, guided by the specific needs of each reviewed country, including Bosnia and Herzegovina. The EPRs-4 will largely be similar to the third cycle of EPRs as it will cover environmental governance and financing, domestic-international interface, environmental media and pollution management and integration of environment into selected sectors. However, selected chapters will be strengthened, for instance to address in depth the impact of climate change on priority sectors, mainstreaming climate adaptation, the mitigation of greenhouse gases and low-carbon development. The content on green economy will be enhanced to address circular economy, if requested by the country under review. The sectoral focus continues to be valuable and the fourth-cycle will be looking at how environmental concerns are mainstreamed into priority sectors, such as energy, agriculture, transport and industry.

Bosnia and Herzegovina generated 1.2 million tonnes of municipal waste in 2019, dropped 1,3% on 2018. A resident of Bosnia and Herzegovina generated on average 352 kg of municipal waste in 2019, 3 kg less than in 2018. In 2019, 933.455 tonnes of municipal waste were collected, by public transportation which is 1.3% more compared to 2018. Data comprising the origins of municipal waste collected indicates that the major increase was registered in the households' waste collection, 2,1% or 15.000 tonnes more, compared to 2018. 1,133,000 tons of waste arrived at controlled landfills, of which 95% was permanently disposed, as disposal option. The municipal waste disposal rate fell to 0.6% in 2019, which is a slight decrease compared to 2018. The current trend suggests that more needs to be done on waste prevention, as well as a significant increase in the recycling rate in the coming years.

3.3 Circular Economy Initiatives in Bosnia and Herzegovina

As best practice and solutions in this and following period, it is foreseen that 10 (ten) units of coal-fired power plants in total will be shut down by the end

of 2023 in BiH, Montenegro and Serbia as a consequence of the implementation of the EU's Large Combustion Plants Directive (LCPD), according to the Energy Transition Tracker. The shutdown of the facilities with an installed capacity of about 1,000 MW will mean a temporary end of operation for thermal power plant Pljevlja in Montenegro and, for now, permanent closure of TPPs Kolubara A and Morava in Serbia.

The Energy Community Secretariat has launched Energy Transition Tracker to monitor the process in the Western Balkans. Balkan Green Energy News published the details of the development of the power exchanges in the region, and now we reveal the activities that are underway to reduce the emissions footprint.

In the last two and three years, circular economy is recognized as a new model and practice to be implemented in BiH. A first step towards implementing CE principles in practice is to establish communal infrastructure for waste disposal, and to treat waste differently – a starting point from linear to circular economy, and "seeing waste as new resource".

3.3.1 Local best practices examples

Circular economy has already started to be more and more recognized as a term in BiH, and as a practice to be used and respected while starting or implementing work and services.

Taking into account the importance of circular economy for the future of the economy, Heinrich Böll Foundation organized an event to discuss "Green Economy in BiH - Opportunities and Obstacles" at the end of November, which, due to the pandemic was held online. The aim of the conference was to explore and highlight the issues, challenges and opportunities that Bosnia and Herzegovina face in the process of energy transition, circular economy and rural development in the light of the Green Agenda for the Western Balkans.

At the beginning of December, INTERA Technology Park in Mostar, organized a one-day workshop on Circular Economy for representatives of companies and organizations that recognize the potential of their business in applying this model. Through the workshop, participants had the

opportunity to hear a brief overview of linear economy, but also to get acquainted with the basics of circular economy and its elements.
This approach is used by LIR, other companies and civil society organizations, where the CE model is presented to wider audience in order to clarify the approach and understanding of the differences between linear and circular economy models. Since this 2020 year has been marked by the COVID-19 pandemic situation in the world, most of the meetings, sessions and discussions were held online. Because of the pandemic many businesses remained closed because of their inability to financially survive through the whole situation.
One of the best practice examples is Elektro-Tim Company from Banja Luka, dealing with innovative decorative lightning for streets and holidays decorating of public areas. Their new project is "From waste to job", in which they are planning to collect plastic waste (from streets, waste dumps, river banks), to recycle it and develop new items such as decorative lightning and New Year's decorations. The plan for 2020 is to collect 90.000,00 plastic bottles and to create 500 decorations. The Company will as well promote the model of circular economy, raising awareness on environmental protection.
Best practices are seen in numerous examples of companies that are dealing with recycling. This is primary for companies dealing with packaging waste, which in BiH legislation is stipulated as a responsibility that lies with the product producer. These companies are operating in line with the legislation in force, recycling paper, metal, plastics, wood and glass. For example, Ekopak company collected over 12,500 tons of packaging waste.
In the City of Neum, local authorities jointly with GIZ support are setting up 15 locations for separate waste collection. Waste will be collected in separate waste bins specifically for paper, plastic and metal. The activity is implemented under the "Integrated Waste Management & Marine Litter Prevention in the Western Balkans" project. It will contribute to the improvement of knowledge on prevention of marine waste and increased knowledge on the importance of environmental protection. The waste utility company will procure waste trucks, 25 metal containers for communal waste, 25 containers for PE, while for the next period it is foreseen to build the

sorting centre. As part of the promotional project activities, there will be organized presentations for citizens and children in kindergartens and schools, in order to inform and instruct them how to separately dispose waste.

At the beginning of July, the civic initiative "Because It Concerns Us" / "Jer nas se tiče" set up educational and promotional stands at two locations in Mostar where citizens could sign a petition to close the waste landfill Uborak near Mostar City. The president of the "Because it concerns us" initiative, Omer Hujdur, said that the citizens who sign the petition give their support for the closing of the existing landfill Uborka and the opening of the landfill in a new location, which would not endanger the health and life of Mostar citizens. The initiative is organized in order to educate the population about the harmful effects of the landfill on the City of Mostar and the inhabitants of the Neretva Valley. The information collected is also about the interest of Mostar residents in moving the landfill from the current to another suitable location.

In December 2019, the investor "Medic otp" submitted a request asking for theapproval of the Environmental Impact Assessment Study on a project concerning the construction of a plant for thermal treatment of hazardous waste in the settlement of Karakaj in the city of Zvornik, which was put on public review from 31.1 to 31.3.2020. At the public hearing in Zvornik, concern was expressed about the justification of the project and a large number of questions were raised but not resolved, because the investor did not attend the hearing. The plant will not be built, because the RS Ministry of Physical Planning, Construction and Ecology rejected the request of the company "Medic otp" for this construction, after the identified shortcomings that make the project unfounded for the continuation of the procedure. The main reason for rejecting the request is the location of the incinerator in the settlement of Karakaj, which has 2,828 inhabitants. A large number of associations, individuals and experts submitted objections to the project to the competent ministry, and as it is pointed out by the Mountaineering Ecological Society (PEK) Korak, which is among the initiators of the initiative to stop this project, they are satisfied with the decision. In addition to

numerous organizations and associations from the civil sector, comments on the study were submitted by the RS Ministry of Health and Social Welfare, the RS Ministry of Agriculture, Forestry and Water Management, the Republic Institute for the Protection of Cultural, Historical and Natural Heritage, and the city of Zvornik and two local communities. This is a great example of the joint efforts, commitment and influence, where the private investor is obliged to implement a project in line with laws and procedures, while respecting local habitants' requirements and environmental protection.

At the beginning of September 2020, the construction of the municipal sanitary landfill "Eko-sep" started. It is foreseen that the construction will last 13 months. The landfill will cover territories of 3 municipalities in Tuzla Canton, and it is owned by the City of Živinice with a share of 60% and the municipalities Banovići (30%) and Kladanj (10%). It is an environmentally friendly landfill, and, as a symbol for environment, young seedlings have been planted. The landfill is located in the area of Živinice, at the Višća, which is located on the border with the municipality of Banovići. It is a project of a total value of around 12 million BAM, which will enable the company Eko-Sep to commercially repay the loan and be stable, without the garbage collection being more expensive for the citizens than it is currently. Waste management and disposal in an environmentally sound and acceptable way, and to make it economically sustainable, is one of the priority challenges of every local community. The benefits of eco-friendly waste management will bring to about 100,000 inhabitants more qualitative life in these three local communities.

The company "23. Mart" in Podlugovi started a business exporting product to two continents. They buy raw materials from regional meat industries, and export it. The products of this company are very popular as food in Turkey, as well as other countries in Asia, although it is waste to us. In BiH habitants eat meat, and in those exporting countries people eat legs and ligaments and other products obtained by processing by-products of the meat industry. Instead of destroying and throwing away meat waste, most can be used and processed and exported where it is used. The company "23. Mart" solves some of the modern problems such as recycling food waste, and it

employs hard-to-employ categories of citizens from several municipalities, Ilijaš, Visoko, Breza and others. Currently, this company employs about 20 workers, and new employments are planned.

From October 2020, the authorized operator for the disposal of electrical and electronic waste ZEOS eco-system is conducting an environmental-educational campaign "Where I buy, there I recycle". The campaign is organized through a collection network of 12 socially responsible companies: Bau&Garten (OBI), BINGO, Elektro Centar, ELEKTRO-JURIĆ, ELEKTRO MILAS, ELMARK GROUP, Gorenje Commerce, KONZUM, MANEDRA-COMPANY, Mercator BH, Orbiter G and Penny Plus. The aim of the campaign is to raise awareness and inform the general public about the possibility of disposing electrical and electronic waste, the so-called "Green furniture", in vertical containers which can be found in the mentioned stores. In this manner, citizens get the opportunity to actively participate in reducing pollution from EE waste.

The company "Omorika Recycling", which uses highly automated process lines, with constant improvement and work on the establishment of the state-of-the-art quality control laboratory, constantly sets an excellent example to others. The factory, which currently has 51 employees, maintains production at a solid level, despite the pandemic, taking careful hygiene measures. Habits of PET and other polymers recycling are still not sufficiently promoted in Bosnia and Herzegovina, despite many existing "recycling stations" (special waste separation containers located in schoolyards and large buildings). Many people are skeptical about recycling and are mistaken in thinking that even separate waste is dumped to city landfills. This is a harmful prejudice, given that "Omorika Recycling" has a great demand, and currently imports part of the waste. Since this factory exports 97% of its final products due to its excellent quality, it constitutes an example of PET recycling best practices.

Table 1. Companies presented in LIRs contribution for 2019

Company	Activities

EKOPAK Sarajevo	Green Dot License (each piece of packaging paid for its disposal); the leading operator of the packaging waste (industries, agriculture).
Aida Commerce	Purchase and recycling of electrical and electronic equipment; PET packaging and plastic; storage, transportation and recycling of medical waste.
ALBA	Leader in recycling and environmental management (21 cities in FBiH and 11 in RS). Collaboration with companies: Robot, FIS, Prevent, Azel France, Konzum, Vispak, BEST, Konjic Karton, Mega Markets (recycling of waste paper, foil, glass, plastic, electrical and electronic waste and edible oil waste).
ZEOS Eco system	System of electrical and electronic waste management in BiH.
CBOS	Metal waste recycling; alternative fuel production - use in cement plants.
FORTIN d.o.o. Tesanj	Transport and recycling of scrap metal.
BH RECYCLIING	Recycling of scrap metal.
GRIZELJ Sarajevo	Production of waste treatment equipment.
ADRA, Mozaik Prijateljstva	"textile bread" – social project of collecting used clothes.

3.4 Findings

3.4.1 Production and consumption

Public procurement

Bosnia and Herzegovina needs to introduce a comprehensive and effective system of electronic public procurement to foster transparency and reduce abuse of public resources. An enhanced monitoring system of possible abuses of the Law on Public Procurement during the COVID-19 pandemic was implemented by the Public Procurement Agency of Bosnia and Herzegovina and prosecutor's offices throughout the country.

Bosnia and Herzegovina has some level of preparation in the area of public procurement. There was serious backsliding resulting from the extension of preferential treatment for domestic bidders in awarding public contracts during the reporting period, in breach of the commitments of Bosnia and

Herzegovina towards the EU. The country needs to align its legislation with the EU *acquis* in the area of public procurement and utilities and start the alignment process for concessions where the legal framework is highly fragmented and needs to be harmonised to eliminate overlaps, inconsistencies and uncertainties. Recommendations from last year were not addressed and remain valid. In the coming year, Bosnia and Herzegovina should in particular:

- withdraw the decision on preferential treatment of domestic bidders in awarding public contracts to ensure compliance in this area with the SAA;
- adopt the new law on public procurement;
- strengthen the administrative capacities of the Public Procurement Agency and the Procurement Review Body by increasing their staff and providing appropriate training, and make the procurement process more transparent.

The current legal framework, enacted in 2014, is partially in line with the EU acquis. The Public Procurement Law aims at ensuring compliance with the principles of non-discrimination, competition, transparency and equal treatment. However, the principle of non-discrimination is not applied as the government of Bosnia and Herzegovina adopted, in May 2020, a decision on obligatory application of domestic preferential treatment for domestic bidders at the rate of 30% for a one-year period starting on 1 June 2020. The decision is in breach of the SAA, which bans any preferential treatment for domestic bidders as of 1 June 2020 (following the transitional period with gradual reduction of preferences). The implementation of the 2016 -2020 strategy for the development of public procurement has been delayed.

Public procurement, which represents a significant share of public spending and thus plays an important role for the private economy, is managed on the base of overly complex procedures which facilitate corruption and still contain a preference for domestic suppliers, which is incompatible with the EU *acquis*. There is still a wide range of administrated prices. There is no information available on the weight of administrated prices in the country's consumer basket.

3.4.2 Waste management

Waste management plans and Strategy

A consistent countrywide strategy for waste management has yet to be developed. Due to its administrative order, Bosnia and Herzegovina needs to ensure a coordinated and harmonised countrywide approach in dealing with waste management. This needs to be reflected both in the legislative framework and its strategic approach. The environmental protection strategy that is under development could provide for this. Bosnia and Herzegovina needs to align with the Landfill Directive, including by adopting a directive specific implementation plan and by closing down or rehabilitating non-compliant landfills. Substantial efforts and awareness raising measures are required to reduce waste generation and promote reuse and recycling. Alignment is required with the EU *acquis* on sewage sludge, batteries, packaging, polychlorinated biphenyls/ polychlorinated terphenyls and end-of-life vehicles. In the coming year, Bosnia and Herzegovina should in particular:

- implement the countrywide environmental approximation strategy, and accordingly enhance the legal framework, strengthen administrative capacity and monitoring systems, and improve inter-institutional coordination among all relevant authorities;
- formalise the procedures for the appointment and functions of the national focal points (NFP) for Bosnia and Herzegovina for the implementation of all environmental conventions to which Bosnia and Herzegovina is a signatory;
- start implementing the Paris Agreement by putting in place policies and measures to deliver on its nationally determined contribution (NDC), update and implement the climate change adaptation and low emissions development strategy, and develop an integrated national energy and climate plan (NECP) in line with the Energy Community recommendation.

3.4.3 Secondary raw materials

The recycled materials still do not provide basis for raw materials in industry. Just a few companies dealing with recycled materials are mainly exporting to EU countries. BiH has no recycling facilities on waste disposal sites. There are two examples of green recycling backyards in Sarajevo and in Trebinje, but those sites are not promoted and used by local habitants.

3.4.4 Competitiveness and innovation

The innovation policy is impeded by the large number of stakeholders involved and the low degree of cooperation and coordination, leading to a low efficiency of the overall system. The absence of an efficient funding system is another factor, preventing the country's innovation policy from achieving better results for the funds spent. Bosnia and Herzegovina's level of assistance to innovation by SMEs is still the lowest in the region, despite both entities' financial allocations for innovation in 2019. SME skills programmes are still receiving support, mainly from international donors. Bank lending remains the dominant source of SME finance and financial instruments for innovative start-ups and high-growth enterprises are still absent. The country did not participate in the Enterprise Innovation Fund (ENIF) of the Western Balkans Development and Innovation Facility, as it had not paid its financial contribution and had not identified eligible projects.

On research and innovation policy, the legislative framework regulating science and research development remains fragmented and still needs to be improved throughout the country. There was no progress in developing the action plan for the implementation of the 2017-2022 revised strategy for scientific development. The government's efforts in upgrading research and innovation policies and related activities (e.g. the Strategy for the Development of Science and the current adoption and implementation of the related Action Plan) as well as grants provided to organisations for submitting proposals under Horizon2020 have been intensified. Bosnia and Herzegovina has completed the preparatory work allowing for Framework Agreements on scientific and technical cooperation. This will greatly facilitate cooperation on research and innovation with international partners.

A very good increase in the publications, 925 publications per 1000 researchers, above the EU average of 717 was observed, as well as a significant increase in the innovation activity, with 67 patents per 1000 researchers. It is important to note that the success rate of applications from Bosnian entities is at 13,2%, above the overall Horizon 2020 success rate of 12%. The country also cooperates at regional level, as a co-signatory of the regional strategy on research for innovation, with the Central European Initiative and is also active in COST with an increasing number of participations in its actions. Bosnia and Herzegovina is taking part in the creation of the South East European International Institute for Sustainable Technologies. The country continues to participate in the European Research Area Committee and related advisory bodies and initiatives. It also participates in the European Strategic Forum on Research Infrastructure, but still has to develop the roadmap for research infrastructure. Bosnia and Herzegovina is still not included in the European innovation scoreboard as not all the indicators needed to participate are available.

Bosnia and Herzegovina needs to continue playing a constructive role in building a common regional market, which will be critical to increase the attractiveness and competitiveness of the region. It will help Bosnia and Herzegovina to speed up the recovery from the aftermath of the pandemic – notably to attract investors looking for diversification of supply and shorter value chains. Such a common regional market has to be inclusive, based on EU rules and built on the achievements of the regional economic area multiannual action plan.

Regarding enterprise and industrial policy principles, Bosnia and Herzegovina still lacks a countrywide industrial development strategy. There is no state-level body promoting consistency between industrial strategies or coherence with other policies affecting industrial competitiveness. The Federation entity adopted a decision on drafting a new development strategy for 2021-2027, as its action plan on industrial policy expired in 2019. The Federation entity and some cantons adopted legislation on mitigation of negative economic consequences of the COVID-19. The Republika Srpska entity introduced a temporary moratorium on banking loans during the

emergency period. This entity is yet to prepare a strategy for industrial development beyond 2020. The renewal of the 2008-2017 development strategy of the Brčko District is still ongoing.

Bosnia and Herzegovina introduced a domestic price advantage in public procurement contrary to the SAA and EU rules. Such a preferential treatment is not considered effective as a means to raise industrial competitiveness and is incompatible with the principles of the EU industrial policy.

Since 2017, Bosnia and Herzegovina has been participating in the EU's COSME programme on the competitiveness of enterprises and small and medium-sized enterprises. It has entity-based Enterprise Europe Network (EEN) consortia, which supported over 2,000 SMEs and uses the Loan Guarantee Facility that lent EUR 14.4 million to 161 beneficiaries through a sole intermediary. Bosnia and Herzegovina has not yet used the Equity Facility for Growth. Some 15 exchanges have taken place through the Erasmus for Young Entrepreneurs (EYE) programme. The potential of COSME to assist SMEs in accessing markets has not been fully used. The country did not participate in the Enterprise Innovation Fund (ENIF) of the Western Balkans Development and Innovation Facility, as it had not paid its financial contribution and had not identified eligible projects.

3.5 Concluding notes

The Circular Economy (CE) concept has seen a more in-depth development during 2020. The European Green Deal was announced and presented in December 2019, while in 2020 it was further broadened. The CE concept enables each country to reach higher ecological standards, and decrease the negative influence of economic activities of natural resources usage. The CE is in line with the presented European Green Deal. The EU will provide financial support and technical assistance to help those that are most affected by the move towards the green economy – the so-called Just Transition Mechanism. It will help mobilise at least €100 billion over the period 2021-2027 in the most affected regions. The Western Balkans and Turkey regions are included as the most affected.

The European Commission presented its Plan for Bosnia and Herzegovina, and the whole Western Balkans and Turkey areas.. On 7th of October 2020, the European Commission adopted a comprehensive Plan for the Western Balkans with the aim of fostering the region's long-term economic recovery, supporting green and digital transition, and supporting regional integration and convergence with the European Union. The main goal of the Economic and Investment Plan is to encourage the long-term economic recovery of the region and regional economic integration, and it is forecasted that the total IPA budget for 2021-2027 will be 9 billion euros. It will support the green and digital transition in the Western Balkans, the implementation of the reforms needed to make progress on the EU path and bring the region closer to the EU single market. All this should lead to sustainable economic growth and job creation.

The project partner EEB organized an online event entitled "New momentum for the environmental agenda in the Western Balkans & Turkey" in October, 2020, following the European Green Deal, and the presentation of the EU of the Green Agenda for the Balkans. Environment and climate are top political priorities within the EU, and are also seeing an increased attention in the external dimension, in particular in the EU's work with the candidate countries in the Western Balkans and Turkey and in its partnerships such as the Eastern Partnership. The increased attention for the environment comes with new opportunities to push for better environmental protection, stronger environmental governance and improved environmental justice.

The changes in Law remained the same as in 2019. There is no such specific term as "circular economy" in entities and district laws and policies. In Republika Srpska, it is mentioned in the amendment of the Law on waste management of Republika Srpska (July 2019) – as the EU Directive 2008/98/EZ on waste was amended in 2018. The competent Ministry incorporated new terms such as reuse of products, green backyards, program of producers extended responsibility, recycling yard, waste management centre and unregulated land field. In the same amendment, the responsibility is set on the local self-government units (cities and municipalities). Duties are specified for: the development of separate waste

collection systems, arranging ways to collect all types of waste, identifying locations for recycling yards, green yards and landfills, including larger waste collection sites, covering the costs of cleaning and rehabilitation of wild dumps, organizing educational and public awareness raising campaigns on eco-friendly waste management, as well as organizing public cleaning activities.

Since the whole year was marked with the pandemic COVID-19, civil society organizations, companies and experts, have mainly organized online events, sessions and discussions where the CE model is presented to a wider audience in order to clarify the approach and understanding on the differences between linear and circular economy models. Because of the pandemic many businesses remained closed because of their inability to financially survive throughthe whole situation.

The best practices examples in terms of supporting circular economy principles in Bosnia and Herzegovina were provided by the following companies: Elektro-Tim Company, EKOPAK, City of Neum, Initiative "Because It Concerns Us", City of Zvornik, landfill "Eko-sep", company "23. Mart", Heinrich Böll Foundation, INTERA Technology Park, ZEOS eco-system, "Omorika Recycling", Aida Commerce, ALBA, CBOS, FORTIN, BH RECYCLIING, GRIZELJ Sarajevo, ADRA, Mozaik Prijateljstva.

04. Kosovo

4.1 Circular Economy in Kosovo

The Republic of Kosovo and the European Union signed the Stabilization and Association Agreement on October 27, 2015 in Strasbourg.

The agreement approved by the Government of the Republic of Kosovo on October 30, 2015, through Decision no. 01/55 on the approval of the Draft Law on the ratification of the Stabilization and Association Agreement between Kosovo and the European Union and the European Atomic Energy Community.

On November 2, 2015, the Assembly of the Republic of Kosovo ratified the Stabilization and Association Agreement between Kosovo and the European Union and the European Atomic Energy Community.

The Agreement obliged Kosovo, as a country aiming for EU membership, that during the process of accession, to adopt the entire *acquis* and make it part of its domestic legislation.

Despite the obligations assumed by the signing of the agreement, Kosovo has not yet managed to harmonize its national legislation with the EU acquis. Environmental legislation is one of the priority areas to addressed, due to the serious environmental situation in the country, in waste management, water management, air quality, degradation of nature, uncontrolled exploitation of natural resources, etc.

This also applies to the accelerated implementation of the new Law on Waste (2012), the Strategy of the Republic of Kosovo for Waste Management (SRKWM 2013-2022) and the Plan of the Republic of Kosovo for Waste Management (PRKWM 2013-2017. The progress achieved during the years, and the institutional capacities at all levels as well as infrastructure capacities are insufficient to meet EU standards.

Circular economy is not included in the legislation of Kosovo, neither as a notion and terminology nor as a method and practice. Currently approved

legislation does not address the concept of Circular Economy and, consequently, makes it difficult to implement this process in practice. For this reason, new legislation needs to be drafted to ensure the inclusion of the relevant concept and terminology of circular economy, providing facilities to persons, entities (for-profit and non-profit) that are contributing or planning to contribute to stimulating circular economy in the country.

In Kosovo, circular economy initiatives are scattered in some private sector companies' initiatives, in superficial discussions by non-governmental organizations, and with a deficient vision from the government to develop this system in the country. Economic development initiatives appear to be focused more on building a more competitive economy by building much more rapidly on the linear economy, rather than on creating an environment that will enable sustainable economic development through circular models. The National Development Strategy 2016-2021, drafted by the Government of the Republic of Kosovo in January 2016, does not mention the term 'circular economy' and does not foresee the essential holistic development of circular economy in Kosovo. The focus of the Strategy is more on managing the consequences of the economy, envisaging increased efficiency in waste management, recycling, afforestation and increased use of renewable energy sources, rather than developing a Circular economy.

Moreover, the Kosovo Economic Reform Program (NREP) 2019-2021 does not mention the term 'circular economy' either and further worse the reforms are oriented on developing the linear economy.

- **Laws on Social Enterprises**, **Economic Zones and Foreign Investment** currently do not provide facilities for incentives for entities that promote circular economy in Kosovo.
- Although the **Law on Waste** provides for the elimination, reduction and prevention of the negative impacts of waste on the environment, it does not focus on the complete elimination of the concept of waste and does not mention circular economy.
- **The Law on Strategic Investments** needs to provide facilities for investors and investments that would help stimulate circular economy in the country.

4.2 Quality of data

In the last year: Circular Economy Country Specific Report reported that Kosovo does not have an integrated information system in place, which can be accessible to the public and with confirmed data.

Lack of data, not posting them on official websites, contradictory data on the same information in different institutions, treatment of public data as confidential or semi-confidential, have caused and are causing difficulties for the media and civil society organizations, concerning fast and accurate access to information.

The environmental sector in general, and the field of waste management in particular, water, air, etc. are areas where information is scarce.

Apart from the Kosovo Agency of Statistics, which conducts continuous assessments of sector development in Kosovo, none of the other Public Institutions, including the Ministry of Environment, has accurate and statistical data on circular economy, recycling and reprocessing of waste in Kosovo.

To date, there is lack of a national information source on waste management data in Kosovo.

There is a lack of data on waste management and information, published by national and local authorities. These data are limited in numbers, because the reporting is not done periodically, hence one has to vaguely estimate the missing data based on what is available and public. The Municipalities of Kosovo do no not publish any data or statistics regarding specific environmental issues, reports, assessments or plans.

4.3 Circular Economy initiatives in Kosovo

In Kosovo, the origins of circular economy can find in the initiatives of companies in the private sector, in superficial discussions by non-governmental organizations, and rarely in national or local policies and legislation.

Economic development initiatives intensively focus on building a more competitive economy by building much faster and faster on the linear economy, rather than on creating an environment that will enable sustainable economic development through circular models.

While there is a growing public awareness of the environment, however, there is a lack of holistic understanding of how different business operations and personal choices interact with holistic human well-being and the enabling environment.

In addition to the lack of knowledge of the terminology and concept by ordinary citizens, there is also a lack of deep understanding of the content of circular economy.

In relation to this, one of the main obstacles that slow down the development of circular economy in Kosovo is the lack of public awareness of the benefits that may derive from circular economy as well as the lack of state financial support that stimulates circular economy in the country.

Citizens of Kosovo currently consider circular economy as a good idea but without economic interest, while waste as an expense and not a profitable opportunity.

Kosovo produces tremendous amounts of organic and inorganic waste, which are disposed in the public landfills. Among organic waste discharged to landfills, are paper, food, glass, plastic etc. Some poor families informally collect a small amount of recycled waste.

Financial support from the States can have greater impact and a positive effect on increasing the participation of citizens in recycling in Kosovo, thereby increasing household income and at the same time eliminating long-term environmental pollution.

To date, there are no public investments in this sector and no incentives to support the private sector to be strong and developed in the country.

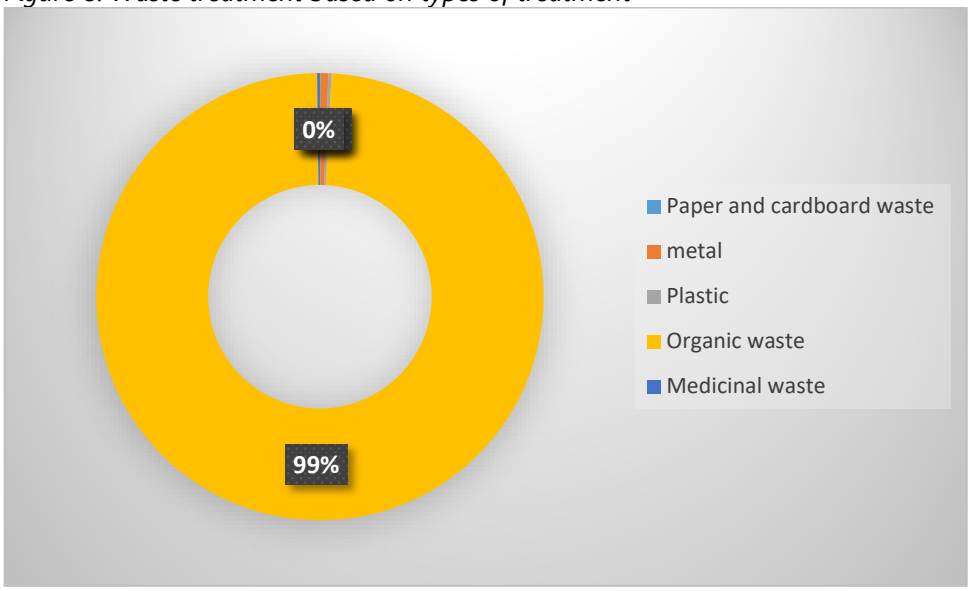
Based on data from the Statistical Agency of Kosovo, the total amount of waste treated in Kosovo is 429,534 tonnes, increasing by 20,641 tonnes from the previous year.

Table 2. Type of waste in Kosovo

Type of waste	***2019***	***2020***
Paper and cardboard waste	***136 ton***	***248 tons***
Mmetal	***1,966 ton***	***2,479***
Plastic	***1,071 ton***	***1,027***
Organic waste	***425,667 ton***	***445,547***
Medicinal waste		***874***

Total	***429.534***	***450.175***

Figure 8. Waste treatment based on types of treatment



The selection of waste from the source still remains a challenge for institutions in Kosovo and ordinary citizens. Organic waste continues to be treated according to the linear method of treatment, collection and disposal.

Car-sharing

Due to the geography of most Kosovo cities, especially Pristina, alternative and eco-friendly means of transportation, such as bicycles or electric cars, are not frequent in the capital. Citizens, is a symbolic number of citizens who use the bicycle as a means of transport. Lack of separate cycle lanes, lack of parking spaces, lack of orientation signs etc. are just some of the reasons for not using bicycles in Kosovo.

Reduction of food waste

There is no serious initiative in Kosovo that can contribute to the reduction of food waste and stimulate sustainable use of food in the food chain. There are a number of Charity Associations, which play an important role

supporting people in need, but their intervention is symbolic, because of the lack of formalized and institutionalized support between State institutions and Charity Organizations.

Second hand clothing and footwear

There are a high number of second hand shops in Kosovo, which are based on import from EU countries, but there are no initiatives for clothing collection inside of Kosovo.

Waste as resource for energy production

Kosovo's two coal-powered plants produce about 97 percent of the electricity it needs while the remaining three percent come from renewable source plants such as small hydropower plants.

Kosovo also imports electricity from neighboring Albania when that country's hydropower plants produce surplus power.

The Kosovo A power plant has a capacity of 345 MW but it is in bad shape after 40 years in operation and considered the single worst pollutant in Europe. The Kosovo Government have drawn up plans to shut it down but cannot do that until they manage to secure sufficient power to replace its output and that is impossible at present.

The Kosovo B power plant has a capacity of 540 MW but it needs maintenance and restoration to bring it in line with the European Union environmental standards. It has been producing electricity for 27 years.

Waste recycling companies

In terms of managing the recycled waste there are approximately 23 companies that deal with their treatment. Among the materials that get recycled in Kosovo are paper, metals, batteries, cans, organic matters, rubber, plastic, etc.

4.4 Findings

- Kosovo's public institutions have done little to promote circular economy as an opportunity for economic development.
- Kosovo institutions have failed to draft relevant legislation that includes circular economy and makes it operational in practice.
- Kosovo institutions failed to provide financial support to waste recycling and recycling initiatives.

- Kosovo's institutions have not created opportunities and found a suitable market for these few new recycling initiatives in Kosovo.
- For these reasons, Kosovo only recycles 5% of recyclable waste, by 2020, it is impossible for it to reach the 50%; a target set by the EU on reducing the waste generation and encouraging recycling.

- Kosovo has 38 municipalities. None of these municipalities has officially started the process of sorting organic and inorganic waste.

4.4.1 Production and consumption

On June 2020, the Kosovo Agency of Statistics published a report on export and import and import of goods in Kosovo; Gross Domestic Product - Q1 2020

According to this report:

Gross Domestic Product in the first quarter of 2020 marks a real increase of 1.29%, compared to the same quarter of the previous year 2019. The real growth of Gross Domestic Product by economic activities is as follows: financial and insurance activities (5.72%) ; professional and administrative activities (4.20%); extractive, processing industry, electricity, water supply (4.12%); information and communication (1.47%); real estate activities (1.17%); trade, transport, accommodation and food service (0.30%).

Meanwhile, there was a real decline in this quarter in economic activity of arts, entertainment and leisure and other service activities (-26.84%); construction (-12.40%); agriculture, forestry and fisheries (-0.15%); public administration, education and health (-0.10%).

Whereas, Gross product according to the approach to expenditures, in this quarter, there has been an increase in exports of goods and services (29.54%); import of goods and services (4.12%); and household final consumption expenditures (0.22%).

4.4.2 Waste management

The process of Waste Management is a responsibility of the Division for waste management under the Ministry of Environment and Spatial Planning.

This division is composed of several sectors that play different roles in the process of waste management, starting from the management and monitoring of depositions, licensing, treatment of waste, and the management of dangerous materials.
The sector that deals with the treatment of waste carries out activities that are interrelated with their separation, classification and recycling.
In terms of managing the recycled waste there are approximately 23 companies that deal with their treatment. Among the materials that get recycled in Kosovo are paper, metals, batteries, cans, organic matters, rubber, plastic, etc.
As we mentioned before, the informal waste collection mostly pushed from the level of poverty and socio-economic situation in Kosovo. For these reasons the poor families, having no other choice, go out in the streets, seek and collect recyclable materials, so at the end of the day they can gain some income by selling them to small private companies with whom they are not normally in a contractual relationship.
Furthermore, the profits gained by such exporting recycling companies are incomparable with what the economically effected groups get at the end of the day. This community consists mainly of minorities, such as Roma, Ashkali, and Egyptian, who work under terrible conditions with no appropriate clothing and in dangerous circumstances.
Human activities are the main source of waste generation. Its high rate is a global concern which includes also (and especially) Kosovo, where this huge amount of waste almost totally ends up in landfills which are in horrible conditions. As it was mentioned before, in Kosovo, all types of waste are dumped in landfills, being those solid, hazardous or non-hazardous, and no waste classification takes place in them. Even more, institutions disposing hazardous waste, such as hospitals, use municipal trash bins and do not treat them prior of disposing them. Regarding oil, only some companies receive back the used oil, which is then used for their needs during winter, such as heating, or they sell it to road building companies, which need it as construction material.

4.4.3 Secondary raw materials

In terms of managing the recycled waste there are approximately 23 companies that deal with their treatment. Among the materials that get recycled in Kosovo are paper, metals, batteries, cans, organic matters, rubber, plastic, etc.

Kosovo companies are increasingly finding profitable solutions to the visible waste problem in the country. Some companies have found ways to recycle Kosovo's waste into useful products, which are exported.

PLASTIKA Company is the first company in Kosovo, Albania and Macedonia that recycles foil and plastic waste as a raw material for the production of foil for Agriculture and Construction, as well as the production of Thermo foil and Stretch foil. In December 2017, the company started with the new super modern line, 5-layer extruder. This state-of-the-art machinery can produce high quality Stretch Hood, Stretch Film, Hood, Agricultural Film.

Tiki Mosaic collects glass waste from all over Kosovo and recycles it into beautiful and colorful mosaic tiles. The company successfully presented their mosaics at the first Green Festival that took place in Pristina.

Izolimi Plast has found success in recycling plastic waste and using it as insulation material. The company has drastically increased its recycling capacity from year to year.

Orient Kosova Mosaic, deals with the conversion of clean glass waste into decorative tiles of the highest quality. The use of recycled glass seemed like the most obvious choice for this company, which started its activity in April 2016. This not only reduces production costs, but actually eliminates this type of waste, which otherwise has contributed to the critical waste issue in the country.

4.4.4 Competitiveness and innovation

The European Innovation Scoreboard does not include Kosovo.

Concerning innovation, the latest indicators of the European Innovative Ranking List (2018) still categorize the Republic of Kosovo as a "modest innovator" compared to other European countries.

Based on the Innovation Scoreboard report for 2019 almost no data were available. Kosovo does not have an innovation survey, and data availability is relatively poor.

4.5 Concluding notes

In order to see positive trends and improvements regarding environmental challenges in Kosovo, especially waste management, Kosovo needs to undertake some affordable and realistic solutions in terms of waste management, which can be:

1. Create a functional inspectorate unit which would add value to the effort of establishing environmental sustainability in Kosovo, specifically waste management, by identifying and eliminating illegal disposal sites, while also applying penalties to citizens and companies violating the laws.
2. Construct new disposal sites which would contribute on environmental sustainability.
3. Encourage the establishment of a credible information system, which indicates periodic data reporting and monitoring of waste management stakeholders; a component of this sector that remains poor in quality and quantity.
4. Increase the capacities in central and local level, being that human or financial resources.
5. Subsidize recycling companies and those of special waste, like oil, vehicles, tires, etc., which would encourage circular economy within the community. The concept of circular economy is new and because of this it is not often and enough used as a terminology and practice.

4.6 Recommendations

1. Complete the legal framework by including the methods of application of circular economy in Kosovo, providing facilities for persons, entities (for-profit and non-profit) that are contributing or plan to contribute to the stimulation of circular economy in the country. The laws that need to be reviewed and supplemented are:
2. Laws on social enterprises
3. Law on Economic Zones, and
4. Law on Foreign Investments
5. Law on Waste
6. Law on Strategic Investments

7. Financial incentives in the form of subsidies or direct payments to the population can bring a change in mentality and behavior and lead to concrete results that can push the development of circular economy forward.
8. Fiscal and non-fiscal incentives, which could provide guarantees for certain investments, which could stimulate circular economy and help encourage businesses to take investment actions that increase the efficiency of the production, consumption chain and could also contribute to a faster transition to this economic model.
9. Other facilities to do business with circular approach can return the focus of short-term economic development.
10. Provide business with easier access to innovative technologies by supporting the facilitation of doing business with more developed countries.
11. Greater cooperation between neighboring countries to exchange experiences, practices in promoting regional economy in the country and the region.
12. Circular economy should be included in school curricula, in all cycles of education.

05. Montenegro

5.1 Circular Economy in Montenegro

The concept of circular economy is quite new in Montenegro. The first analysis regarding circular economy in Montenegro was conducted in 2014 by the **UNDP (United Nation Development Programme)** in the document: ***Resource efficiency and sustainable human development.***[49] According to the above-mentioned document, an analysis of national policies concludes that the concept of a circular economy is far from being implemented in Montenegro, and that the efficient use of resources has not been directly integrated into Montenegrin policies and regulations. However, this document also identifies some positive developments: Issues such as stimulation of innovations and productivity, mitigation of the impacts of economic growth, sustainable management of natural resources and governance improvements are integrated into the **National Sustainable Development Strategy (NSDS) 2007 – 2012.**[50]

The National Strategy for Sustainable Development by 2030, which fully transposed the UN Agenda 2030, recognized the importance of the transition to a circular economy. One of the main goals of this Strategic document is: "**Improve waste management applying the circular**

[49] UNDP_Resource efficiency and sustainable development 2014

[50] National Sustainable Development Strategy 2007 – 2012

economy-based approaches" as priority number one. In order to achieve this goal it is necessary to apply the following measures:

- Encourage activities aimed at the reduction of waste generated in the territory of Montenegro,
- Apply primary selection of waste as efficiently as possible, as a prerequisite for the achievement of clearly defined goals in the area of re-use and recycling of discarded materials (which implies considerable investments into the separate collection systems in the coming period, followed by appropriate awareness raising programs);
- Establish efficient waste selection and recycling (collection, separation, treatment, re-use of recyclables, as well as a system for prevention of waste – include incentives for the delivery of recycling activities, stimulate secondary raw materials market and demand for recyclables);
- Develop a system for management of special waste streams (e.g. used batteries and accumulators, used tires, end-of-life vehicles, waste electric and electronic equipment, packaging waste, construction and demolition waste), biodegradable waste, sewerage sludge, veterinary waste, animal by-products, medical waste, industrial waste;
- Circular economy approaches should be gradually introduced into the waste management system (shift from "landfill system" to circular waste management system), applying measures for the encouragement of resource-efficient use of raw materials in production, enabling reduction of waste generation, especially of hazardous waste generation and use of waste as alternative fuel, applying the approaches based on recognition of economic and environmental importance of waste, establishing macro analysis and sector material flow analyses – MFA, and introducing related circular economy indicators);
- Improve the application of penalties in waste management, and raise awareness about the importance and advantages of sustainable waste management (ecological knowledge, ecological behaviour, ecological situation valuation).[51]

[51] National strategy for sustainable development by 2030

The beginning of industrialization and transition towards market-based economy brought an unsustainable model of economic growth to Montenegro, which is similar to many other developing countries "**take, produce, consume and discard**"; it is a linear model resulting from the assumption that quantities of materials extracted from nature are inexhaustible.

According to the 2013 Report on the implementation of the Ministry of Sustainable Development and Tourism, estimated quantities of generated waste amounted to 243,941 tons, and in the period between 1990 and 2011, emissions of gases from waste had been reduced by only 20%. Taking into account that linear economic growth model turned out to be unsustainable and that competition for use of scarce raw materials has become ever stronger, **transition to circular zero waste economy** has become one of the prerequisites for sustainable development and increased resource efficiency.

Besides the National Strategy for Sustainable Development by 2030, the concept of circular economy is recognized in the proposal of the Law on Waste Management (Official Gazette of Montenegro, 64/2011). In the new proposal of the draft **Law on waste management** the amended directives which are in a circular economy package are partially transposed spatially in terms of percentage of recycling rate. The development of the new Law on Waste Management was planned for the end of 2018 (new deadline is end of 2020), but the Law has not been prepared and adopted yet. The new Law on Waste Management will transpose amendments directives, which are part of the Circular Economy package.

The Government of Montenegro, the Chamber of Economy of Montenegro, UNDP in Montenegro and Circular Change have already started work to develop a Roadmap on circular economy for Montenegro.

5.2 Quality of data

Quality data generation (and availability) is a prerequisite for designing evidence-based strategies and for further monitoring of the progress in any sector, including the developments in the sectors that are fundamental for circular economy (aspects of circularity of resources in the production and

consumption, from waste management, secondary raw materials, stimulation of circularity of resources in competitiveness and innovation initiatives).

Data on **municipal waste** are unreliable and inconsistent. Data on industrial wastes are of low quality. The scope for measuring performance against key targets is limited as the data are absent or unreliable, and the basis for forward projections is relatively weak. These data-related shortcomings are recognised in the National Plan for waste managment 2015 - 2020.[52]

For instance, concerning waste management, even though there are legal provisions (Rulebook on the manner of keeping records of waste and the content of a form on waste transport (Official Gazette of Montenegro, 50/12);) the data is inconsistent.

For example: according to the MONSTAT (Statistical Office of Montenegro) the total amount of the collected communal waste for 2017 is **292.762t,** according to the Ministry for Sustainable Development and Tourism the total amount of the collected communal waste in 2017 is **254.523t.**[53] This means that there is no standardized methodology between relevant institutions for collecting data regarding waste management. Without a defined methodology for data collection about waste management between relevant institutions, there is no efficient way for waste management and transition from linear to circular economy.

The most important point related to the transition from linear to circular economy is establishing communal infrastructure for waste disposal.

In terms of landfill infrastructure, there are two sanitary landfills in the country designed in compliance with, or close to, EU standards. A further four are in various stages of design / seeking financial support.[54]

According to the **Report on the Implementation of the National Waste Management Plan in 2017**, from the total amount of generated waste:

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[52] A comprehensive assessment of the current waste management situation in South East Europe and future perspectives for the secor including options for regional co-operation in recycling of electric and electronical waste

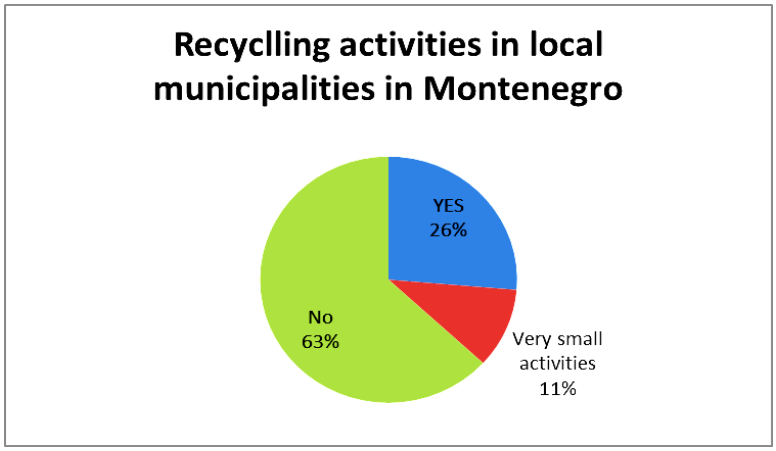
[53] Izvještaj o sprovođenju Državnog plana upravljanja otpadom 2015 – 2020 za 2017, oktobar 2018

[54] These proposed landfills will be developed in Niksic (located in Budos), Herceg Novi (located in Duboki Do), Bijelo Polje (located in Celinska Kosa), and Berane (located in Vasov Do).

- 154,973 tons of municipal waste **were deposited at landfills (about 61%),**
- 50,147 tons of municipal **waste is temporarily stored (about 20%),**
- 4.416 tons of primary and secondary selection for reuse and recycling is separated;
- recyclable fractions, separately collected 21,987 tons of bulky and biodegradable waste. According to that, it can be concluded that about **10% of the total amount of municipal waste is reused or recycled;**

This unsatisfactory situation reflects inadequate infrastructure, especially in the North and the northern part of the Central regions, as well as a lack of proper enforcement in those areas where sanitary landfills already exist.
NGO Green Home has prepared an **Analysis of waste management in Montenegro**. For the purpose of analysis, it has used local and national waste management plans and annual reports on its implementation. In total it has analysed **19 local managements plans and reports on their implementation** where it should be aplicable. Three municipalites (Plav, Nikšić and Budva) were not part of the Analysis because there were no plans available on their web sites even though Green Home asked for them according to the **Request for free access of information**. In five municipalities (Podgorica, Herceg Novi, Bar, Kotor and Tivat) activities related to the waste separation and recycling were conducted. Two municipalities, Kolašin and Mojkovac, recorded very few activities regarding waste seperation and recycling. In the rest of municipalities (in total 12) there is no amount of separate waste to be recycled.

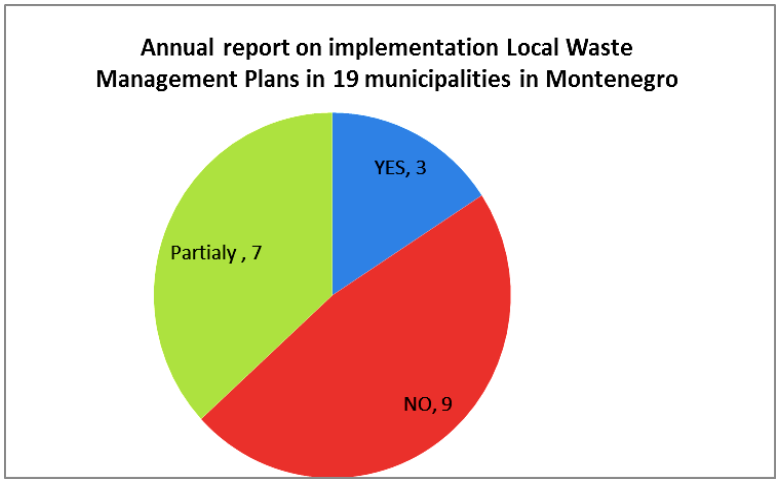
Figure 9. Recycling activities in local municipalities in Montenegro



The reason behind this situation is related to lack of infrastructure and insufficient coverage of rural areas with communal services and infrastructure.

Two local government units - municipalities (Nikšić and Kotor) **have not established municipal waste management** in accordance with regulations. According to the Law on Waste Management, municipalites are obliged to prepare an **Annual Report on the Implementation of Local Waste Management Plans**. According to the Analysis, **three municipalites** in total (Podgorica, Cetinje, Tivat) prepared annual reports according to the Law. **Nine municipalities have not prepared a report** and **seven other municipalities prepared a report but it does not include all nessessary data** prescribed by the *Rulebook on the detailed content and manner of submission of annual reports on the implementation of waste management plans.*

Figure 10. Annual report on implementation Local Waste Management Plans in 19 municipalities in Montenegro



According to the waste management analysis in Montenegro there are **373 unordered landfills** which include **temporary dumpsites** as well, although the deadline for their closure has expired.

In the municipality of Berane, a medical waste treatment facility was installed to collect medical waste from the territory of municipalities: Kolašin, Mojkovac, Bijelo Polje, Pljevlja, Berane, Rožaje, Andrijevica and Plav and in the City of Podgorica.[55]

5.3 Circular Economy initiatives in Montenegro

In the recent years, there have been some initiatives and actions, which promote the concept of circularity of resources (materials, goods, and services) in the economy cycle, even though many were not explicitly named as "circular economy" activities.

Bike-sharing

Bike sharing is a service in which bicycles are made available for shared use to individuals on a short-term basis for a price or free. The capital city Podgorica has developed the business plan for this service and according to the business plan, it will cost 300.000EUR.

Reduction of communal waste and raising awareness of recycling

Currently there are several on-going initiatives (International Coastal Day, Let's do it Montenegro). The main aim of these campaigns is to support citizens to proactively participate in finding solutions to issues related to environmental protection, especially waste disposal.

[55] Analysis – Chapter 27, Enviroment and Climate protection, Coalition 27

Smart city - Podgorica

The capital city Podgorica, in cooperation with Siemens company, developed a Study entitled: "Development of energy efficient infrastructure" which is the first step towards developing Podgorica into a "smart city". This study has been conducted within the global programme *Business to Society* which is funded by Siemens company.

Initiative: "Svaka limenka se računa" - Every can is counted

The program "Every can is counted" is a partnership between can manufacturers, beverage manufacturers, the recycling industry and environmental organizations, who know how important cans are and want to encourage you to recycle more. The campaign "Every can is counted", launched in England, is also being reported in Ireland, Austria, Hungary, Romania, France, Scotland and Greece, and in 2013 it was conducted for the first time in Montenegro.

Collecting EE (electrical – electronic) waste in Montenegro

The NGO 'Green Heart', in cooperation with Hemosan company, launched the action: collecting the EE waste. In 2015, under this initiative, a total of 150t of the EE waste was collected, stored and exported. Also, this NGO launched the first ecological – energy portal: reciklirajte.me.

MojeBiciklo

MojeBiciklo service includes registration of bicycles and simple verification via the QR code, which enables protection of bicycles from theft and resale, as well as buyers of used bicycles with an insight into the correctness of bicycle ownership. Also, in this way, the purchase of bicycles from legal sellers is encouraged and the local economy is encouraged in the long run. The MojeBiciklo service is free for all users.

5.4 Findings

Using the approach and logic of the EU proposed Monitoring framework and indicators, the assessment of the current state is grouped under the following stages and aspects of circular economy: (1) production and consumption, (2) waste management, (3) secondary raw materials and (4) competitiveness and innovation. This follows the logic and structure of the EU circular economy action plan in broad terms.

5.4.1 Production and consumption

Limited progress can be observed towards more circular trends in production and consumption, in terms of waste generation.

The indicator on self-sufficiency is related to measuring the extent to which the country is dependant on the supply of raw materials. In that respect, Montenegro belongs to the group of raw materials dependant countries.

According to the last press releases of the Statistical Office of Montenegro in the period January – December 2018 the data show that the export of goods amounted to 400.1 million euros, and imports amounted to 2 553,6billion euros.

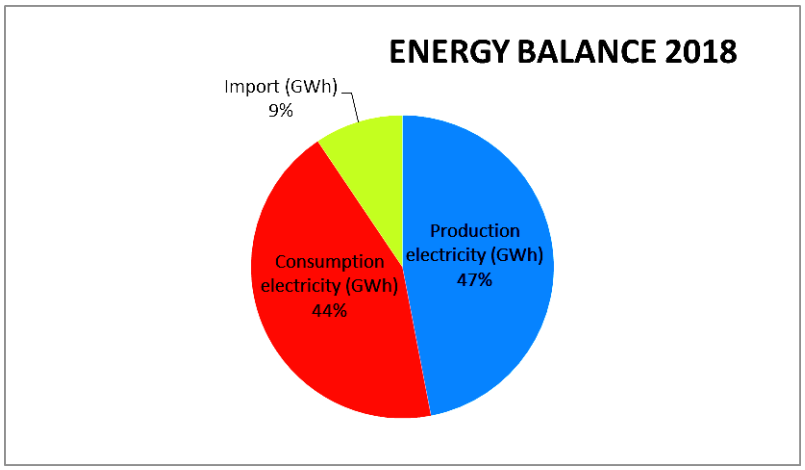
In the structure of exports according to the Standard International Trade Classification (SITC), the products classified by material amounted to 107.2 million euros (of which: Non-ferrous metals - 74 million euros, Iron and steel – 18.9 million euros and others).

In the structure of imports, according to MONSTAT, the most represented are Machines and transport devices (sector 7) in the amount of 638.1million euros (out of which: Road vehicles – 187.2 million euros, Electrical machines, apparatuses and devices – 124.3 million euros and other)

Conclusion: having in mind this data,Montenegro **is an import dependant country**.

In terms of **energy**, according to the Energy balance for 2018, the **realized production in 2018 was 3743,8GWh per year, the realized consumption was 3473,9GWh**, while for the mentioned year the total import was **752,5GWh**. Taking into account the above, it can be concluded that **Montenegro is energy-stable**, however, given that the biggest percentage of electricity comes from hydropower plants, there may be fewer or greater deviations from what is planned by the energy balance, and in that sense, there may be fluctuations in imports and exports electric energy (due to hydrological conditions).

Figure 11. Energy balance 2018



Public procurements in Montenegro amounted to 10.38% of GDP in 2015.[56] Although the *Law on Public Procurements* stipulates possibilities to apply criteria related to environmental protection and energy efficiency ("green procurements"), this option is insufficiently used in practice.

In Montenegro, **"green public procurement"** is not widely used in a way to provide that aside from the prices of products and services, procurements take into account the costs of negative impacts of consumption and production on the environment and social aspects. In that context it is significant to emphasize that integration of energy efficiency requirements into the processes of public procurement ismissing. There is no awareness, preparedness, nor legal and technical knowledge and skills of the officials in charge of the application of the criteria relevant for green public procurement during the implementation of tenders for the procurement of products and services without negative social and environmental impacts.[57]

5.4.2 Waste Management

According to the data of the Statistical Office of Montenegro - MONSTAT the total amount of **generated municipal waste** in Montenegro in 2018 was **330,839 tones.**

[56] Public procurements participated with 9.46% in GDP in 2014, Ministry of Finance, May 2016;

[57] National Strategy for Sustainable Development 2030

Each inhabitant of Montenegro produces an average of 531.7 kg per year, or 1.46 kg of municipal waste per day. Compared to 2017, the total amount of collected municipal waste increased **by 2,1%[58].** In total 292, 762 t was collected.

According to the Statistical Office of Montenegro - MONSTAT, the total percentage of the separate fraction is 20%, from which: 12.3% green waste, 7,6 % separate collected fractions and packaging waste 0,1%.

According to the last report on the implementation of the National Management Plan for Waste Management 2015 – 2020 for 2017, landfill disposals amounted in total to 154,973t (61%); temporarily storage in total 50.147t (20%) and for only the recycling amount in total 26 403t (10%) (recyclable fractions, EE waste and green waste). This means that the dominant way in the management of collected municipal and other types of non-hazardous waste is the disposal, i.e., landfilling of the waste at legal and illegal landfills and recycling rate is 10%.

There is no explicit data about the recycling rate of the packaging waste.

Pursuant to the draft proposal on Law on Waste Management Article 56, it is provided that:

An enterprise that manages an organized collection and treatment system for waste packaging must take measures to ensure recycling by December 31, 2030, at least 55% of the total weight of the packaging placed on the market in order to achieve at least the next recycling ratio of individual components:

1) 60% of the weight of glass;
2) 60% of the weight of paper and paperboard;
3) 50% of the weight of metal;
4) 22.5% of the weight of plastic;
5) 15% of the wood mass.

An enterprise that manages collection and treatment of packaging waste must undertake measures to ensure recycling by December 31, 2035 at least 65% of the total weight of the packaging placed on the market in order to achieve at least the next recycling ratio of individual components:

1) 70% of the weight of glass;

[58] State Statistical Office, News Release No, 99 from 03.06.2019.

2) 75% of the weight of paper and paperboard;
3) 70% of the weight of iron metals and 50% of aluminum;
4) 50% of the weight of plastic;
5) 25% of the wood mass.[59]

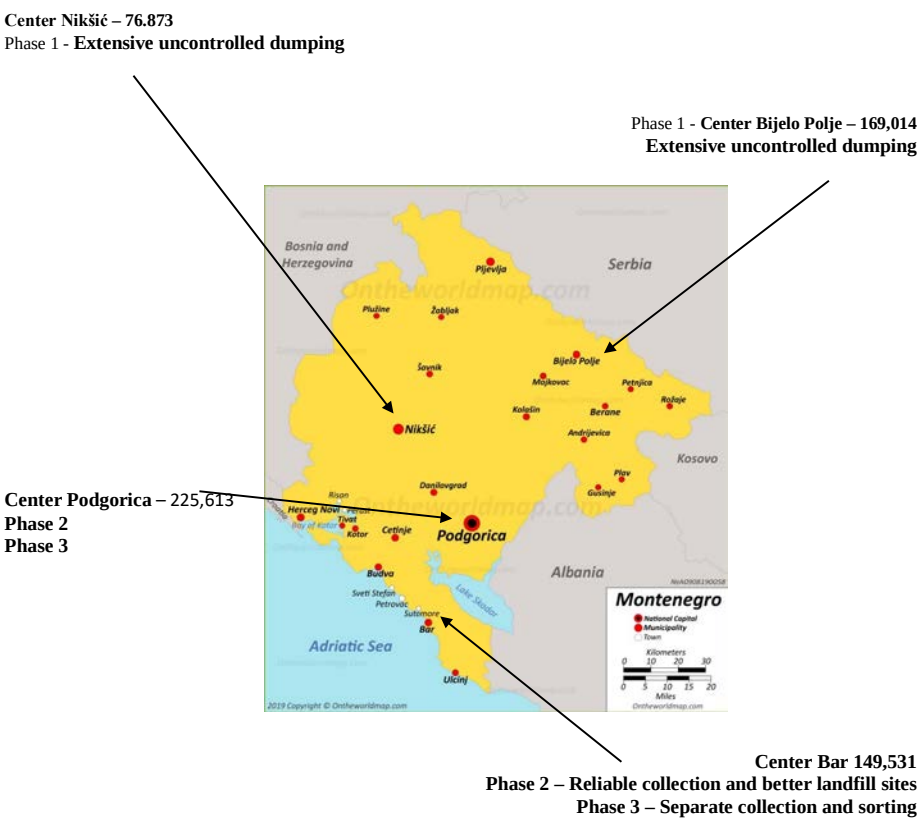
Although they pose a serious threat to human health and environment, there are no precise data on specific types of waste in Montenegro, It is rarely recycled and most end up in landfills or burned. Among special types of waste, we can mention electrical and electronic products (EE), waste vehicles, tires, batteries and accumulators, waste oils, packaging, construction waste, asbestos waste, sewage sludge, medical and veterinary waste.
Precise data on quantities and types of waste do not exist, but projections in the State Waste Management Plan indicate that it is taking on alarming proportions.
In the context of waste management within circular economy, '***Modern Waste Goals and Paths – Germany's expertise for an advanced circular economy' paper was developed by German experts***. According to this document every country has to go through the following five phases when it comes to waste management and moving towards circular economy:

- Phase 1 – Extensive uncontrolled dumping
- Phase 2 – Reliable collection and better landfill sites
- Phase 3 – Separate collection and sorting
- Phase 4 – Expanding the recycling industry
- Phase 5 – Circular economy – waste as a resource

Phases 3 – 5 constitute the transition from waste disposal to a circular economy
If we replicate this scheme in Montenegro, based on the analysis conducted on local waste management plans, the situation is the following:

[59] Draft on Law on waste management – Should be adopted by the end of 2018.

Figure 12. Situation of waste management plans in Montenegro



5.4.3 Secondary raw materials

The contribution of recycled materials to satisfying the demand for raw materials is still small to negligible. In Montenegro, there are recycling facilities for plastic, paper and vehicles. But, having in mind that the industry in MNE is not at the same technological level with EU countries, recycled materials are exported.

However, the country lacks recycling facilities for glass, batteries, and electrical and electronic equipment.

5.4.4 Competitiveness and innovation

Concerning innovation, the European Innovation Scoreboard[60] does not include Montenegro. As a rule, countries can be included only if data are available for at least 20 indicators. According to available data, Montenegro does not fulfil the conditions.

5.5 Concluding notes

- Montenegro has not yet made the transfer from linear to circular economy.
- The concept of circular economy usually is identified with green economy;
- In terms of waste management as a part of circular economy, Montenegro is having trouble with the implementation of local management plans and unreliable data on communal waste.
- Barriers to the use of technical materials, including minerals, in the context of introducing circular economy concepts, are numerous.
- Mitigation of pollution or innovation is not encouraged, whereas lack of political and other measures for internalization of external costs is evident.
- Inter- sectoral and cooperation among separate chains of value is insufficient, potentially more efficient models of production and consumption are not well-accepted by producers and consumers.
- Lack of investments into renewal and maintenance of the existing infrastructure, into innovations and technologies is present (stuck with the use of existing technologies), as well as insufficient waste separation and recycling.

[60] European Innovation Scoreboard 2018

06. North Macedonia

6.1 Circular Economy in North Macedonia

Our economy is still mainly oriented to the "creation, use and disposal" of material resources in a linear way. In circular economy, systems are designed to make better use of valuable materials and products, for not as much of use of primary resources, and for greater economic opportunities.

As a candidate country for accession to the EU, the Republic of North Macedonia needs to apply all European standards and best practices, as well as to comply with the EU legislation, and to find a way to manage waste, which is an important segment in the change from linear to circular economy. Ensuring a waste management system in accordance with the prescribed standards will not only contribute to a better environment, but will also contribute to the protection of human health and will ensure the implementation of circular economy in the country.

In that respect, the EU targets should be the key indicators for sustainable waste management. However, for some EU measures, the target dates envisaged with the plan have already been breached, and for others the dynamics are feasible and realistic in the Macedonian context. Additional time for implementation will be negotiated as part of EU accession negotiations.

The aim of this third country report is to contribute to mapping the situation in the country with regards to the existing (un)enabling environment (legal, economic, social) and to support awareness and advocacy efforts aimed at increasing knowledge regarding circular economy and influencing both general public and respective authorities on the necessity and benefits of this particular new approach.

6.2 Quality of data

The key challenges, noted in our 2019 country report, pertaining to data quality generation (and availability), as a prerequisite for designing evidence-based strategies and systems to monitor the progress in any sector, including the developments in the sectors that are fundamental for circular economy (aspects of circularity of resources in the production and consumption, waste management, secondary raw materials, stimulation of circularity of resources in competitiveness and innovation initiatives) are still relevant.

For instance, concerning waste management, the lack of reliable data limits the accuracy and reliability of any planning process and makes it impossible to measure the performance effectively in relation to the main objectives set in NWMP. In order to generate quality data on waste management and the "fate" of waste, improved data collection methods are needed. A long-term solution is the implementation of a comprehensive data collection and monitoring scheme based on electronic tracking and reporting of data from the generators, to the collectors and subsequent waste handlers.

Economic incentives to promote recycling are still limited and the lack of an organized extended producer responsibility scheme is hindering the market. In practice, there is no mechanism to verify and crosscheck the quality of the data supplied, as different official sources (like the Macedonian Environmental Information Centre and the State Statistical Office) provide different figures. In 2019, North Macedonia has 43 active municipal communal non-standard landfills. Only two of these landfills - the landfill Drisla in Skopje and the landfill in Gevgelija - have a permit by the MoEPP as sanitary landfills, and large quantities of the communal waste (solid and biodegradable) still end up at more than 1000 illegal dumpsites. In addition, only few of the communal non-standard landfills have equipment for measuring the weight of the deposited waste, which means that there is no way to accurately record the amount of waste that is deposited at the landfill, let alone to quantify it by type of waste (for example, food waste).

There is a need for a clear mechanism that will require (and ensure) the submission of quality data (for example, aggregated and/ or segregated by streams of waste, recycling and reusability) and availability for their

verification (methodology used). The development of information technology systems is estimated at 1.5 million euros to 4 million euros, and the costs for the maintenance of the system are projected at up to 185,000 euros per year. A set of indicators for circular economy, as well as more relevant indicators for the waste management sector, are lacking.

6.3 Circular Economy initiatives in North Macedonia

The role of awareness raising, education, training and capacity building on the concept of circular economy should not be underestimated. In the recent years, there have been a number of initiatives and actions, which promote the concept of circularity of resources (materials, goods, and services) in the economy cycle, even though many were not explicitly named as "circular economy" activities.

Circular (re)use of materials as a way forward…

"Trash for Cash" initiatives

Vending Machines for plastic and glass bottles in the Municipality of Centar

The Centar Municipality Public Parking Enterprise and the Municipality of Centar (one of the ten municipalities in Skopje), announced pioneering the idea of Reverse Vending Machines (RVM) for plastic and glass bottles this year in order to motivate local residents to get involved in the process of selective waste disposal.

The enormous volume of waste created by the increasing consumption of the modern society puts a huge pressure and generates the need for all actors in the chain of waste creation to act decisively against this challenge. The selective waste disposal, collection and recycling is extremely important in the overall process for maintaining a clean and unpolluted environment. On top of that, this "trash", put into the cycle of circular economy, can be turned into "cash" – or, in other words, into a "win-win" situation.

To become feasible, a selective waste disposal system requires numbers, that is, the more people are part of it, the more successful it is. Thus, the question is how to scale it up, and make it attractive, so citizens are motivated to become more efficient and faster involved in the process of selective waste disposal?

One quite successful concept, the so-called "Deposit refund system" is a proven waste collection method that guarantees high material collection and recycling rates, and is recommended in many strategic documents by international organizations.

Another option are the so-called "reverse vending" machines. They operate on the same principle as standard vending machines (put money, get output), but are called a "reverse vending machine" due to the reverse process ("put a product, get a money-return").

Nine such machines have already been purchased, and the municipal council has approved provision of 18 more by the end of the year. They were installed in the beginning of November this year, even though originally announced for March 2020..

The Municipality of Centar has provided subsidies for this project in its budget for 2020. The municipal authorities hope that this positive example will be the beginning for further engagement of other municipalities, institutions, and private companies in order to reduce waste, but also to increase the percentage of collected packaging waste that can be recycled into raw materials.

All resident citizens, who choose to participate in this process of selective waste disposal, will receive subsidies from the municipality in exchange for plastic and glass bottles. For each bottle they put in the RVM, a certain amount of money (1.5 denars for each bottle) will be received on the new Green Pay Card, allowing them to buy in certain markets, shops, bars, etc. on discount, or to pay for the services provided by the parking company.

Good examples are welcome. A long-term shift in the mindsets of all involved in the waste management system in our country is even more than welcome.

Green business ideas help for better environment…

"GREEN IDEAS" is an annual competition that supports the development of small, local and green, sustainable business ideas in Albania, Kosovo, North Macedonia, Montenegro, Serbia, Bosnia and Herzegovina and Greece. The winners of the national competitions, 3 from each country, compete in a regional competition for prizes worth of $ 5,000 or $ 10,000. The regional competition has been held since 2012 as part of a program for the Western Balkans funded by the Rockefeller Brothers Fund (USA).

ARNO (Association for development of new ideas), for the sixth year in a row, administers the national competition "Green Ideas" in Macedonia and is proud that so far the country has regional winners and a total investment of 60,000 dollars for the development of green businesses in the country.

Among the winners of this year's national competition is Sofija Daceva, with her idea of "VAJS Additives".

A story of a young innovator with green ideas and a commitment for putting circular economy concept into practice

Sofija Daceva is only 25 years old, but with a solid entrepreneurial experience. She already owns two companies, through which she plans to create new and innovative products, for which she uses by-products as raw materials. At a time when the world is facing a pandemic and the challenge of how to continue living and leaving as little environmental footprint as possible, the idea that leads Sofia forward is a world with zero waste. Her company "VAJS Group", (one of the winners of this year ARNO "Green Ideas" Competition) is working on processing pomace (a mixture of grapes skin and seed), one of the most abundant residues in the grapes processing and wine production industry, into a multifunctional food additive.

What is VAJS additive and why is it an innovative product?

In the world, over 13 million tons of pomace is produced annually, and in Macedonia alone more than 22,000 tons per year. It is a by-product, that occurs in the process of wine production and although it is a very useful product, it remains unused. After more than a year and a half of research and development, the company VAJS Group has developed an innovative technological process for extracting three healthy ingredients from the

pomace: antioxidants, fibres and food colouring pigmentation. This enabled the development of a multifunctional additive from quince, also known as VAJS Additive. At present, food companies use three different additives to obtain these properties, while the VAJS additive is a product that possesses all three functionalities. This will actually be a healthier and more cost-effective solution for food industry producers.

Sofia came up with the idea of processing the pomace while working on another, no less interesting project - the production of ice cream from wine. For this, the British Government and Warwick University, where she completed her postgraduate studies in Innovation and Entrepreneurship, support Sofia.

What exactly and in which industries can the additive from the processed pomace be used for?

According to the young innovator, the additive produced from pomace can have a very wide application, but of course, it requires detailed research and experiments to confirm its usage potentials. At the moment, their company is experimenting in three different sectors of the food industry, the baking industry, confectionery and dairy sector. The pomace has been tested in several specific products such as bread, ice cream, candy, and the latest experiment will focus on adding an additive to cheese.

According to the obtained results, the additive has proved successful and useful in all industries, so in the first year they plan to focus only on these three sectors. They already have interest from four factories in Macedonia, and there is also interest from companies from the United Kingdom.

When the waste is valued as a resource….

This idea of collecting waste from wineries and then processing it into a new product is based on a similar principle like the one of the Sunilens company, which collects household waste oil and processes it into bio-fuel.

According to this young inventor, especially in recent years, environmental awareness is increasing, mainly due to the consequences from pollution and environment degradation we are facing more frequently than before.

In particular, for the wineries, after the production of wine or brandy, they usually dispose of the pomace properly in a way that it ends up in the

landfills, where it is often burnt. This has a negative impact on the soil and environment. Additionally, some cities in the country, as well as in the Balkans, face illegal removal of the pomace, which ends up in rivers or in sewer systems. VAJS Group noted this problem and for that purpose developed a model of circular economy through which the conventional supply chain of wineries will be changed to circular, i.e. the pomace will be purchased from the wineries and it will be processed into a product useful for humans.

So far, VAJS Group has talked to several small wineries that have expressed satisfaction with this idea, as it is an ideal solution to their problem with the pomace and will have a positive result for both parties.

Will this waste generate a new waste?

According to the technological process for the production of the additive, 80% of the pomace is used, and the remaining 20%, which consists of branches, insects and other by-products is removed before starting with the production process and it can be further processed and used as organic fertilizer, as this waste is of organic origin.

In fact, this is one of the goals of VAJS Group: developing a circular business model with zero percent waste, but of course, it takes time and additional resources.

Innovation is in the air…

Investing in young innovators is a path to a sustainable circular economy

During February 2020, the Fund for Innovation and Technological Development (FITR) has organized a consultative debate on the new mechanism for financial support of young innovators. FITR has prepared a "Rulebook on Financial Support of Scientific and Technological Excellence and Entrepreneurship for Students and Youth" - a draft document aimed at establishing the rules under which financial and technical assistance is to be provided to talented children and their mentors.

Representatives of several educational institutions and civic associations participating in the debate assessed this step as positive, supplementing it

with their own suggestions and comments that should be taken in finalizing the rulebook.

The purpose of establishing the new measure, as reported by FITR, is to open additional opportunities for financing young innovators, which will cover all phases, from identifying their potential and opportunities, preparation for participation in international competitions and financial support.

This measure is intended for all educational institutions and associations that implement activities to support talented students or work on the development of entrepreneurial skills among young people.

Investing in young innovators is a path to a sustainable circular economy.

Innovation can spark new ideas for circular economy

Innovation is an important stepping stone for the economic development and investment of any country. Even in the latest EU progress reports[61] on innovation, the countries of the Western Balkans (Montenegro, Serbia and Northern Macedonia) are assessed as "modest to moderate" innovators.

From that perspective, the latest initiative to create a Regional Innovation Fund should certainly encourage greater cooperation and contribute to making the region more attractive to foreign investors.

At the end of April 2020, a working meeting, organized by the Fund for Innovation and Technological Development (FITR), the Regional Cooperation Council and the World Economic Forum was held to define the next steps for the implementation of the initiative to create a Regional Innovation Fund. The meeting was attended by the ministers from the region of the six Western Balkan countries, as well as representatives of the European Commission, the World Bank, directors and representatives of the business sector. The FITR model functioning and the results achieved so far at the national level were presented at the meeting.

All participants supported the idea and the need for increased regional cooperation and the creation of a regional fund that would be of great importance in times of crisis as shown by the COVID-19 pandemic. The main goal of such a fund would be to support young innovators and new start-up

[61] https://ec.europa.eu/growth/industry/policy/innovation/scoreboards_en

companies, which would keep local talents in the country, but would also, encourage and attract more foreign capital inflows and increased competitiveness of the region as a whole.

According to FITR, by creating a regional market of over 20 million, the region will be more attractive to investors as a whole rather than as fragmented markets. Thus, the region will prove that it is worth investing in it. According to their analysis, companies that have financial support show particularly high productivity growth compared to previous years. Their analyses of over 200 micro to medium companies, supported through the Fund, showed that the average profit growth in 2019 is over 70%, and the amount of funds paid to the state budget on various grounds by 25% exceeds the amount paid by the state through the Fund in support of innovation and technological development in 2019.

Representatives of the international institutions stressed that the creation of such a fund would be a very positive move forward because there is a lack of concrete regional initiatives. According to the RCC, it is crucial that it will be created in the region and for the region.

This Regional Innovation Fund should, among other things, contribute to strengthening cross-border cooperation and encourage investments in the private sector and innovation. Thereby it could open new opportunities towards financing business projects in the region, especially start-up companies, which would help reduce the problem with brain drain.

The next meeting of the working group was scheduled for the end of May 2020, where the initial model of the Regional Innovation Fund would be presented, prepared by FITR, the Regional Cooperation Council, the World Economic Forum, and the Innovation Fund of the Republic of Serbia. The plan of the Regional Innovation Fund is expected to give a special focus to the Western Balkans Green Agenda and the circular economy concept.

6.4 Findings

Using the approach and logic as in our two previous reports, based on the EU proposed Monitoring framework[62] and indicators,[63] the assessment of the developments in 2020 is grouped under the following stages and aspects of circular economy: (1) production and consumption, (2) waste management, (3) secondary raw materials, and (4) competitiveness and innovation. This follows the logic and structure of the EU circular economy action plan in broad terms.

6.4.1 Production and consumption

Limited progress can be observed towards more circular trends in production and consumption, in terms of waste generation.

The indicator on **self-sufficiency** is related to measuring the extent to which the country is dependant on the supply of raw materials. In that respect, North Macedonia belongs to the group of raw materials dependant countries.

According to the State Statistical Office[64] data, the total value of export of goods from the Republic of North Macedonia in the period January – September 2020 decreased by 15% compared to the same period in 2019. The value of imported goods in the period January –September 2020 is 13% less compared to the same period in 2019. Import coverage by export in the period January –September 2020 is 76.0%.

According to the latest edition of "Macedonia in figures 2020"[65] of the Statistical Office of the Republic of North Macedonia, in the period 2009 - 2019 the commodity exchange with foreign countries continues the positive trend of increase in terms of the coverage of import with export. Thus, in 2019, export participates with 43.2% in the total trade exchange, which is an increase of 8.4% compared to 2009. In 2019, the EU[66] is the North Macedonia's main trading partner, accounting for 80, 79% of the country's

[62] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on a monitoring framework for the circular economy, 2018,

[63] Eurostat: Circular economy indicators

[64] State Statistical Office

[65] Macedonia in Figures 2020

[66] State Statistical Office, Statistical Yearbook 2020

exports and 62.40% of its imports. Exports from the country are centred on several products, the most important being: ferro-nickel alloys, iron and steel, and textiles. The main imports are crude oil, electricity, flat-rolled iron and steel products, and vehicles.

Concerning energy, compared to 2017, the energy dependence of the Republic of North Macedonia on imports in 2018[67] showed a tendency of increase (from 56,5 % in 2017 to 58, 1 % in 2018). In 2018, the energy dependence of the Republic of North Macedonia on import was 58.1%. The final energy consumption was 893 kgoe per capita, and the final electricity consumption was 2941 kWh per capita. The share of renewable energy in the gross final consumption for the year in question (2018) was 18%. The share of electricity from renewable sources in the gross production of electricity shows a tendency of increase, from 23, 1 % in 2017 to 35, 1% in 2018. The share of electricity from renewable sources in the gross consumption of electricity also shows a tendency of increase, from 17, 1 % in 2017 to 26, 1% in 2018.

Public Procurement represents a substantial share of the GDP of any country, including North Macedonia. It can give substantial boost of the so-called **green public procurement,** which in turn can perform as a driver for circular economy and for innovation. In the last seven years, (2010-2016) public procurements were from 25% to 37% of the state budget. In 2017, the Public Procurement represented only 19% of the country's budget, which was 11 percentage points less than in the previous year (2016), while in 2018 it was 15, 71%. The new Law on Public Procurement (adopted in January 2019) foresees provisions that should enable the introduction of certain environmental criteria in the public procurement procedures, in accordance with the regulations on environmental protection and in line with the relevant provisions of the EU Directives. However, as "green procurement" provisions were to enter in force as of January 2020, its implementation in practice is yet to be seen, as there are no segregated (officially available) data or in-depth analyses whether and to what extent green public procurement conditions were either requested or met.

[67] Macedonia in Figures 2020

The EU commitment to encourage "green public procurement" is also foreseen in the new Circular Economy Action Plan for a cleaner and more competitive Europe from March 11, 2020. Namely, in the plan, a Mandatory Green Public Procurement criteria and targets in sectoral legislation and phasing-in mandatory reporting on GPP, are foreseen as of 2021. North Macedonia foresees the implementation of the mandatory green public procurement criteria as of 2022.[68]

The **municipal waste generation** [69] per capita in 2019, (an average of 456 kg per capita) has increased by 10.7 % compared to 2018. Municipal waste is collected by or on behalf of municipal authorities. It consists of waste from the households, including the bulky waste, similar waste from commercial and trade industries, official buildings, institutions and small businesses, waste from gardens, street waste, the content of waste containers and the waste from market cleaning. The State Statistics Office gathers the data on the amount of collected waste via the municipal public enterprises' annual reports; the data on the generated waste is calculated based on estimation. Therefore, the quantities of generated municipal waste per capita in the period between 2010 and 2019 are to be taken as estimates.

Table 3. Municipal waste generation per capita in the period 2010-2019

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Generated waste (t)	721,507	735,250	786,909	792,785	765,156	786,182	796,585	786,881	854,865	915,943
Annual amount per capita (kg)	351	357	382	384	370	380	384	379	412	456

Reducing **food waste** is perceived to have an enormous potential for saving the resources we use to produce the food we eat. The EU Directive 2018/851, which entered into force on 5 July 2018, sets out measures to protect the environment and reduce waste, including food waste, promote the use of renewable energy and increase energy efficiency and provide new economic

[68] Draft SEA Report: National Waste Management Plan 2020-2030, pp.22

[69] State Statistical Office, Environmental Statistics 2019

opportunities. The Directive contains binding and non-binding provisions for EU Member States that include preventive measures to reduce food losses in the process of production, retail and other food distribution, including households, by setting specific targets at the EU level for food waste reduction, 30% by 2015 and 50% by 2030. According to the directive, Member States are required to conduct food waste reduction campaigns, measure progress and exchange good practices between countries and food business operators, developing a generally accepted methodology and minimum standards for uniform food waste quantification.

North Macedonia still does not have relevant legislation in place that will regulate the issue of food waste. It is worth noting that the laws related to waste management do not explicitly address the issue of food waste. Even in the new National Waste Management Plan 2020-2030 food waste is not considered as a specific waste stream, but is in some way incorporated into the biodegradable waste. As food waste occurs in all stages of the food production (harvesting, conservation, etc,) and distribution (in shops, restaurants, catering facilities, at home) chain, it is principally very difficult to quantify it and monitor the trends (are they improving or deteriorating), especially, when official or officially verifiable data is not publicly available (or does not exist).

6.4.2 Waste Management

Waste management generally shows slow but positive developments, yet with significant room for improvement for recycling across the key waste streams.

About **recycling rates of municipal waste,** they are still very low. The dominant way in the management of collected municipal and other types of non-hazardous waste is the disposal, i.e. landfilling of the waste at sanitary landfills and active municipal communal non-standard landfills. According to the data of the State Statistical Office, the total amount of **collected municipal waste** in the Republic of North Macedonia in 2019 was 632 484 tones. Compared to 2018, the total amount of collected municipal waste decreased by 1.1 %.[70] The highest amount of collected municipal waste was registered in the Skopje Region - 164, 971 tonnes or 26.1% of the total

[70] State Statistical Office, News Release No, 9.1.20.02 from 22.04.2020

collected amount in the Republic of North Macedonia. Of the total amount of collected municipal waste, 522, 983 tonnes or 83% were collected from households, and the remaining 17% from legal and natural persons (commercial waste). By waste type, the highest amount of collected waste is mixed municipal waste, 542, 664 tonnes or 85.8%, and the lowest amount is rubber waste, 778 tonnes or 0.1% of the total amount of collected waste.

In relation to the reported total collected municipal and other non-hazardous waste in 2019, only 0.7%[71] was reported as processed (composted waste, recycled paper, cardboard, glass, plastic and metal), which again shows tendency of increase compared to 0.28% in 2013.[72]

The **recycling rates for packaging waste** are showing a tendency of increase**.**

Although the **recycling of packaging waste** produced in North Macedonia is on the rise, most of this waste is not recycled. The EU's circular economy package has set new packaging targets, but they are unlikely to be achieved soon, and longer deadlines will be negotiated as part of accession negotiations. The goals for waste packaging recycling for North Macedonia, set in the existing Law on Packaging and Packaging Waste Management ("Official Gazette of the Republic of Macedonia" No. 161/09), will be redefined in the new Law on Packaging and Packaging Waste Management, which is yet to be adopted.

By the end of 2020, at least 50% of the weight of packaging waste generated on the territory of the Republic of North Macedonia should be recycled with recovery operations or energy processing operations.

Table 4. Total collected quantity and recycled or processed packaging waste for 2018

Total / By type	Quantity of packaging released on the market (t)	Total recycled packaging waste (t)	/%
Packaging waste	**71,286.55**	**33,655.46**	**47.21%**
Glass	11,547,89	2,853.21	24.71%
Plastics	19,964.41	7,687.31	38.51%
Paper and cardboard	24,182.84	21,863.66	90.41%

[71]. Draft SEA Report: National waste Management Plan 2020-2030, pp. 95

[72] ANNUAL REPORT 2018 from processed environmental quality data in the Republic of Northern Macedonia

Metal	3,152.37	552.42	17.52%
Wood	8,982.15	698.86	7.78%
Composite materials	3,456.89	-	-

**Source: Ministry of Environment and Physical Planning. Data are obtained from collective handlers submitting reports to the Ministry of Environment and Physical Planning*

For 2018, the recycling rate of packaging waste was 47.21% (compared to 35.3% in 2015). As it can be seen from the above stated data, the total recycling percentage aims to achieve the objectives envisaged by law.

The **recycling** of collected municipal **bio waste** is negligible, (around 0.16% in 2019)[73]

The quantities of **electrical and electronic equipment (EEE)** imported and put on the market in the period extending from 2014 to 2020 (according to the data provided by the Customs Administration of the Republic of Northern Macedonia) increased from 14,251.84 tons in 2014 to 30,231 tons in 2020 (by June 30, 2020). Until 2019, there were three active collective handlers for WEEE. According to the data provided by these three companies, from a total of 12.897,93 tonnes put on the market in 2019, only 2.206,9 tonnes were collected and handed over for treatment (exported), as the country still does not have recycling facilities for the WEEE.

Understanding the picture of **construction waste and rubble management** in the Republic of North Macedonia is difficult and limited by the same problems related to the accuracy of data acquisition and reporting. There are no accurate sources of data on the total amount of produced construction waste in the country, and even less, how much of it is recycled.

In the National Waste Management Plan 2009-2015 (published in 2008) the following is stated regarding the generated construction waste: "The annual production of construction waste stream depends to a large extent on construction activities in the public and private sectors. Estimated quantities for Macedonia are based on experiences from other countries and it is estimated that around 230-250 kg / per capita / per year is generated; for

[73]. Draft SEA Report: National waste Management Plan 2020-2030, pp. 95

Macedonia, the average annual amount of generated construction waste is estimated at between 460,000 and 500,000 tones / per year. "[74]
Recent various regional studies have come to a conclusion that this is a low estimate compared to the amount created in the new EU member states. The average for construction waste and rubble is 0.94 tons per capita per year in other countries.
Looking at these figures, it can be estimated that the quantities of generated construction waste and rubble in North Macedonia (excluding the excavation waste) should be between 1.3 and 2.95 million tons. Using the average, the quantities of construction waste and rubble generated can be estimated at 1.95 million tons.
Recycling targets: The Waste Framework Directive sets a target of achieving a processing rate of 70% (including preparation for reuse, recycling and other processing of materials) for all non-hazardous construction waste and rubble by 2020. For RN Macedonia, it is appropriate to negotiate the extension of the deadline to achieve the goal as part of the accession negotiations. Improving practice and infrastructure as well as installation of an appropriate data collecting system will take at least another 10 years by 2030. To achieve this goal, it is necessary to sort construction waste and rubble into its constituent fractions and to recycle inert waste (bricks, tiles and concrete) into a recycled aggregate.
Recycling of waste batteries and accumulators. Due to the lack of an electronic data collection system, and also the poor inspection to determine producers who do not meet the obligations under the Law, the only figures available to the MoEPP come from independent and collective collectors of this type of waste, who according to positive law, submit annual reports to the Ministry. However, these reports refer only to the producers who exercise their right and obligation through collective actions (by 2019, around 57% are organized through the three licensed collective entities). Data on all producers registered in the Registry of Producers maintained by the MoEPP in accordance with the law is missing. Data on small producers are not included here either.

[74] Ministry of Environment and Physical Planning, National Waste Management Plan of the Republic of Macedonia (2009 - 2015)

In accordance to the annual reports for 2019 submitted to the Ministry of Environment and Physical Planning, on treatment of waste batteries and accumulators, provided by legal persons possessing permits for treatment of waste batteries and accumulators, from 8.796,79 tonnes put on the market, only 1.023,034 tones of waste batteries and accumulators were collected for further treatment (recycling).

6.4.3 Secondary raw materials

The contribution of recycled materials to overall materials demand is relatively low. Trade in secondary raw materials is increasing

The contribution of recycled materials to satisfying the demand for raw materials is still small to negligible. In the Republic of North Macedonia, there are recycling facilities for plastic, paper, iron and steel, non-ferrous metals, and accumulators. However, the country lacks recycling facilities for glass, batteries, and electrical and electronic equipment.

6.4.4 Competitiveness and innovation

There is no available segregated data on the private investments in economic sectors relevant to circular economy (reuse and recycling), nor how many jobs or added value comes from this sector, because the current statistics do not distinguish those activities that clearly contribute to circular economy from those that do not.

The transition towards greater circularity in the country economy is foreseen in a number of national strategic documents (Draft Industrial Strategy with a focus on Manufacturing)[75] and legal acts (Law on Waste Management, and the new National Plan for Waste Management, 2020-2030). Support to the transition towards circular economy is manifested mainly through the Innovation and Technological Development Fund instrument helping domestic companies to improve their innovation.

Concerning innovation, the latest indicators of the European Innovative Ranking List (2020)[76] still categorise the Republic of North Macedonia as a "modest innovator" compared to other European countries. This ranking

[75] https://konkurentnost.mk/wp-content/uploads/2018/06/IndustryStrategy17MayCLEAN.pdf

[76] EIS 2020, Country profiles https://ec.europa.eu/docsroom/documents/41896

stems from poor performance (below the EU average) in relation to several key indicators, although there is a steady progress in relative performance compared to EU in 2012 by 10.8 index point), but 4 index points behind compared to EU in 2019.

As noted in the country profile list, "Attractive research systems, Innovators and Firm investments, are the strongest innovation dimensions. North Macedonia scores particularly well on *Foreign doctorate students, Medium and high-tech product exports, Non-R&D innovation expenditures, and Population with tertiary education*. *Employment impacts, Finance and support and Intellectual assets* are the weakest innovation dimensions. Overall, North Macedonia's lowest indicator scores include Public-private co-publications, Private co-funding of public R&D expenditures, Design applications, and Sales of new-to-market and new-to-firm product innovations".

6.5 Concluding notes

The introduction of EU regulations and standards requires new complementary waste management mechanisms, especially economic mechanisms.

In order to comply with the Circular Economy Package, North Macedonia will need to monitor the introduction of production processes and standards in order to minimize source waste and improve the recycling rate of used products. Successful compliance with the new regulations will require improved cooperation activities and shared responsibilities among all stakeholders.

Traditional inspection methods will need to be supplemented with new enforcement mechanisms based on preventive measures. There is an urgent need for improved protocols and an integrated system for data collection and reporting on waste management.

07. Serbia

7.1 Introductory remarks

At the EU level, 2020 brought into life the *Circular Economy Action Plan* (March 2020); however, without binding EU-wide targets to reduce resource use and related material footprint, it falls short of addressing Europe's over-

consumption and matching its own words of respecting planetary boundaries.[77]

For Serbia, conclusions from 2019 spotlight on circular economy in Serbia, wrapped up in December 2019 in the publication *Circular Economy in Serbia: The Process Started* [78] , remain in 2020, including that there is no integrated approach in place yet and the environmental policy framework needs to be reinforced in key economic and sectoral policies.

In 2020, in Serbia, the process is continuing with some (small) steps and good example cases, primarily at company level.

7.2 Some milestones to mention

7.2.1 Negotiation position for Chapter 27

Serbia is a candidate country for EU membership; in January 2020 Serbia presented its Negotiating Position for Chapter 27 (Environment and Climate Change).[79] and the EU now is preparing a Draft EU common position, towards this chapter that is to be opened for negotiation.

Within the Negotiation position it is also planned how and when Serbia, through a set of Directive Specific Implementation Plans, will implement all EU member countries obligations. For waste management (where circular economy targets related to waste management are presented), Serbia is requesting a transitional period.

Serbia has achieved *some level of preparation* in the area of environment and climate change. Overall, Serbia made *limited progress* in the past year, mainly on strategic planning. The 2019 recommendations remain valid. Serbia should considerably step up ambitions towards a green transition.

The circular economy concept in Serbia is still in its early stage. The term "circular economy" is not mentioned in the 2020 EC Report. The CSOs in Serbia raised this issue in 2018.[80] Serbia is implementing some initiatives that support circular economy.

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[77] Background paper to the EEB 2020 Annual Conference: The European Green Deal one year in (EEB is Partner organization in ENV.net project)

[78] Mihajlov A., A.Mladenović and F.Jovanović (2019), Circular Economy in Serbia: The Process Started, Belgrade: Environmental Ambassadors for Sustainable Development

[79] Negotiation Position for Chapter 27 is under „limite"sign, and it will be like that until Chapter 27 open for negotiation

[80] Under the ENV.net3 project umbrella

In 2020, an Ex-ante analysis of effects related to the (future) circular economy policy is completed,[81], as well as "A Roadmap for circular economy in Serbia" published by the Serbian Ministry for Environment with the support of UNDP.The purpose of the Roadmap is to encourage production through application of circular business models, to motivate industry to create new work posts and to advance doing business by detecting innovative, sustainable solutions on the market.

7.2.2 New industrial policy

According to the 2019 analysis conclusions, for Serbia the relevant strategy is the *National Strategy for Sustainable Use of Natural Resources and Goods* (2012-2022), with some elements relevant for circular economy; however, this strategy is not accompanied with an approved action plan to ensure its implementation.

Although Serbia has been having *Waste Management* Strategies since 2003, in line with EU *acquis,* now in 2020 the latest strategy is not legally valid. An updated/new public policy document on waste management, as well as a new/updated Law on Waste Management, in line with EU *acquis* related circular economy and waste is expected in 2020 (more realistically in 2021). Considering the recommendations of the European Commission on Circular Economy, *amendments to the Waste Management Act* were adopted in January 2016, enabling support of the circular economy concept and creation of green jobs.

In 2020 Serbia adopted the *New Industrial Policy Strategy 2021-2030*. At about the same time the EU introduced a new European Industrial Strategy, and consequently this Serbian one did not take into account the messages formulated in the new EU industrial policy.

EASD analyzed nexus Serbian New Industrial Policy Strategy 2021-2030 – the circular economy concept, i.e. how much of the circular economy concept is substantially considered. The strategic challenges of the new industrial policy have been identified; this public policy document contains comprehensive reform steps in the field of industrial development and permeates a large part of economic activities, with a focus on the manufacturing industry. As a

[81] through project "Policy and Legal Advice Centre – PLAC III, EuropeAid/139295/DH/SER/RS).

horizontal industrial policy this strategy addresses, among others, the issue of the circular economy.

Important issues intended to be addressed in this document are: the issue of compliance with environmental standards by industrial companies and the circular economy as a source of new industrial growth. The mission is for the industry to grow taking into account resource efficiency and the potential of new products and technologies in the field of environmental protection. Having in mind the presented and elaborated strategic challenges, as well as an overview of the current situation, the Serbian New Industrial Policy Strategy 2021-2030 lists the strategic areas of intervention within which the goals and measures will be defined. In this spotlight report, we are just mentioning the measures that are related to circular economy (strategic area 6), such as:

Table 5. Measures related to circular economy in Serbia

Measure	
2.5	Support program for industrial economic entities for the **procurement** of first-generation technological equipment. The measure aims to support the import of modern equipment that is **in line with the principles of circular economy**, i.e. to respect the principles of efficiency and minimal negative impact on the environment. Type of measure: incentive.
5.1	**Promotion of the circular economy and education of economic entities**. This measure aims acquainting economic entities with the importance of the more efficient use of material resources and energy efficiency in industrial processes and opportunities for savings in the production process and earnings. This measure will be implemented through the organization of promotional and educational gatherings and the use of services of centers that are active in this sector (Center for Circular Economy of the Serbian Chamber of Commerce; Center for Cleaner Production,

	Faculty of Technology and Metallurgy, etc.). Type of measure: informative-educational.[82]
5.2	Encouraging **investment in circular and low-carbon economy solutions** as growth generators. Adjusting the criteria for encouraging investment in production equipment in a way that favors investment in equipment that meets European energy efficiency standards and is certified in accordance with it. Type of measure: regulatory.
5.3	Encouraging the **more efficient use of material resources and energy efficiency in industrial processes**. Adjust the criteria for encouraging investment in production equipment by favoring investment to use recycled resources. Type of measure: regulatory.

7.2.3 EASD continues to provide knowledge-based advocacy towards circular economy

EASD continues to provide knowledge/information advocacy and education activities on circular economy. Before the ENV.net3 project, where one of the topics is chosen to be circular economy, Environmental Ambassadors worked with some companies in Serbia (Tetra Pak, RECAN Foundation, C&A Foundation), which supported Eco-schools Serbia network in their pioneer efforts to promote and to switch daily activities to circular economy. Thus, Eco-schools Serbia network has been raising awareness since 2013 among local communities on how to deal with resources in a sustainable way and to promote re-using of different materials, especially beverage carton, metal and textile. These activities resulted in the strengthening of institutions working with children and adults with special needs, to develop skills and entrepreneurship and to generate income. The first regional conference on circular economy in the frame of ENV.net project was held in October 2018 in Belgrade, with the participation of all ENV.net partners, as well as relevant experts, institutions, national and international organizations which have already run projects and/or initiatives focused on circular economy. EASD

[82] ENV.net and EASD activities belongs largely to this measure

also initiated the revisiting and updating of the National Strategy for Sustainable Use of Natural Resources, possibly in the form of the National Sustainable Use of Natural Resources Plan; this was a joint activity of EASD and the National Convention on the EU. The proposal to innovate and to rethink the National Strategy for Sustainable Use of Natural Resources was addressed to the Ministry of Environmental Protection of the Republic of Serbia.

In 2020, ENV.net3 research related to circular economy was presented at EurAsia Waste Management Symposium 2020, Istanbul, Turkey, in October 2020.

The Publication[83] is receiving great attention. It is posted on Researchgate, and as of 31 October 2020 there have been309 reads of the publication in Serbian, and 124 reads of the publication in English.

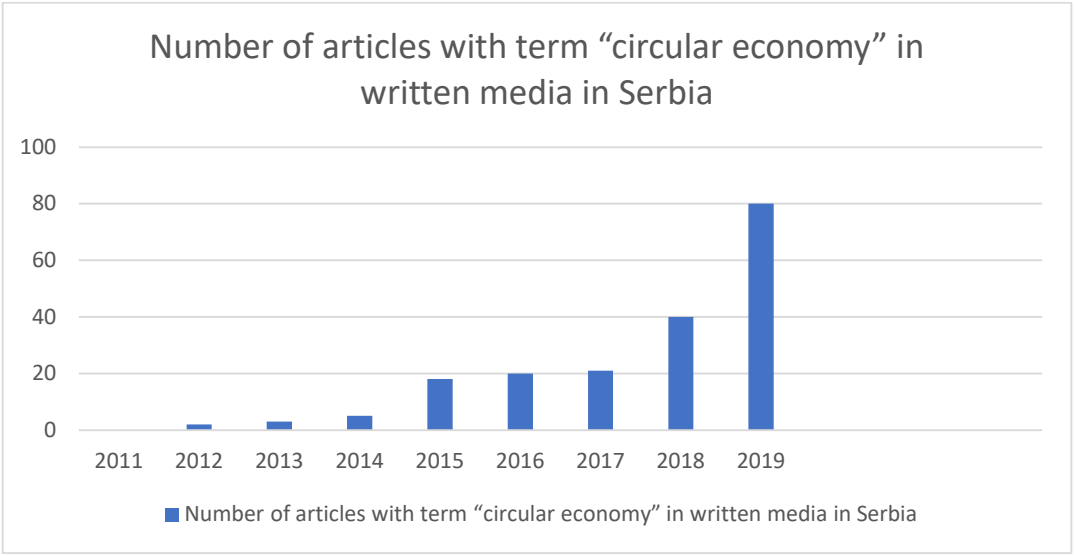
EASD continues working on a separate research[84] within the ENV.net3 project (implemented by *Ebart media archive*, Belgrade) on nexus environmental issues-media in Serbia. Below outreach data are presented.[85]

Figure 13. Number of articles with term "Circular Economy" in written media in Serbia

[83] Mihajlov A., A.Mladenović and F.Jovanović (2019), Circular Economy in Serbia: The Process Started, Belgrade: Environmental Ambassadors for Sustainable Development

[84] This research is the base of the EASD paper Environmental Communication: Media Archive Reports as a Participant Science Tool, accepted to be presented at International Scientific Conference ICCM 2021- International Conference on Communication and Management, to be held in August 2021 in Athens, Greece (with acknowledgement to ENV.net project).

[85] Data for 2020 will be inserted at later stage, at the beginning of 2021



It is worth noting that ENV.net3 project in Serbia on circular economy is one of priority topics from 2018, and that the EASD team believe that our activities contributed to results presented above.
In this context the EASD team would like to list the related subgrant projects:

1. **The Education Development Centre “Planet”, City of Sombor (project: „The Hive- circular economy as a model of entrepreneurship for the youth“).**

Activities supported:

- Creation of promotional videos and the entire campaign of the project;
- Promotion and organization of the action of collecting old textiles in primary and secondary schools in Sombor, sorting it;
- "Quality Buzz Generator" Workshops - Going for Responsible Entrepreneurship - Young people with intellectual and physical disabilities, with the support of teachers, create certain usable items using old clothes, materials (two workshops monthly for six months at ŠOSO "Vuk Karadžić");
- Promotion of circular economy workshops - workshops in four primary and six secondary schools in Sombor - initiation of collection of garbage from garments, sorting it out and realization of workshops

for the production of items from collected raw materials in each school;
- Organizing a lecture on the topic of circular economy and entrepreneurship in extracurricular activities in elementary and secondary schools with the aim of involving these in their curriculum for the next school year;
- Organization of sales exhibitions in which objects made at workshops will be presented and sold, and for the purpose of collecting funds for the arrangement of an excursion for young workshop participants;
- Communication with different stakeholders (representatives of local self-government, schools, associations, entrepreneurs, individuals, etc.) in order to provide support for the establishment of a sustainable social enterprise of young people that will use the circular economy principle and enable them to be useful members of society and employees;
- Attending the meeting of eco-school coordinators at Zlatibor and organization of a sales exhibition;
- Furnishing "The Hive" - the space (obtained by the city) to continue the work of the social enterprise of youth with intellectual and physical disabilities.

2. The Association Zlatibor cycle, Municipality of Cajetina, (Project: Model of circular economy in the service of environmental protection in the municipality of Cajetina). Activities supported:

- raising the awareness of citizens of the municipality of Cajetina regarding the importance of responsible behavior to protect the environment through the model of circular economy,
- activities on promotion and engagement of NGOs in a campaign in the local community and advocacy issues regarding the importance of the environment and sustainable development,
- establishment of the Council for Sustainable Development and Education of the Municipality of Čajetina, with the involvement of students in primary and secondary schools from the municipality of Cajetina,

- educational and promotional activities related to environmental protection and workshops for didactic resources of natural materials, raising awareness among parents about responsible behavior, circular economy and environmental protection;
- encouraging the concept of renting and making instead of buying toys- establishing Eco Toys Library (collection of used and production of new toys made of natural materials);
- raising the level of knowledge of the employees in the kindergarten, primary and secondary school teachers in the municipality of Čajetina on the activities through which the principles of circular economy and sustainable development are presented to pupils;
- raising the level of awareness of employees in local and regional media about the importance of broadcasting educational and promotional content on the principles of circular economy and sustainable development and presenting examples of good practice.

3. Center of expertise for natural and economic resources (Project: Re-fresh 4EU); supported activities:

Development of Analysis as Advocacy Tools for Information based advocacy.

- Contributing to improve the creation and implementation of environmental policy in line with the EU.
- Enforcing intensification of action for climate and environment, including circular economy (in the current situation of European integration).

7.3 Concluding notes

The circular economy concept in Serbia remains in its early stage.

In the *New Industrial Policy Strategy 2021-2030* it is underlined that circular economy and reduction of greenhouse gas emissions include:

- A clear strategic direction of the state is needed for the transformation of the economic model in the direction of circular economy and reduction of greenhouse gas emissions.

- Underdeveloped awareness of industry representatives about the importance of the environment and the fight against climate change in general. Especially in terms of waste management, and the possibilities of using waste as a raw material in industrial processes.
- Through a series of regulatory changes, the EU places special emphasis on the preservation of material resources and the improvement of energy efficiency of industrial capacities, as well as the comprehensive introduction of the concept of circular economy. It is necessary to harmonize domestic regulations with EU regulations in the field of circular economy and climate change.
- Lack of necessary institutional infrastructure (bylaws and administrative capacity) for the implementation of adopted legal solutions, which would encourage the process of economic transformation.
- Industrial production in the country is predominantly based on older technologies, which belong to the larger environmental pollutants and greenhouse gas emitters. Such technologies are accompanied by higher energy consumption and waste production per unit of product (with a significant occurrence of losses in material flows). Insufficient level of waste and wastewater treatment by individual industrial entities has also been identified in the country.
- Insufficient use of the potential of renewable energy sources. Renewable energy production requires additional investment, which makes it more expensive compared to the use of conventional fuels. The use of energy from renewable sources by industrial entities in the country is also insufficient due to insufficient financial strength or insufficient awareness.
- Significant lag of the country in terms of waste management, wastewater and the degree of waste recycling. Lack of necessary infrastructure for waste management (waste collection, sorting, storage and processing systems) and wastewater. Insufficient recycling rates for wood and plastic, which have great potential for inclusion in the circular economy system. Occurrence of significant losses of potentially valuable raw materials due to large amounts of

waste (including packaging waste) disposed out of legal landfills and waste management sites.

Additionally, EASD concluded with remarks on the main obstacles to switching to the circular economy concept, and the "picture" is "more colourful":

- The use of natural resources and circular economy concept are not a national priority and strategic goal (currently only indirectly through EU accession as a priority).
- No integrated approach is in place (circular economy is relevant to all sectors of the economy, not only for waste management); limited multi-sectoral approach and connection.
- Appropriate and adequate waste management policy related to circular economy.
- Means of financing by all sources (often financing unsustainable recourse management models).
- Capacities, primarily at local level and businesses (for the new concept).
- Limited awareness raising and education/dissemination of knowledge around circular economy topics and green agenda, including youth.

Stricter enforcement of the environmental policy framework in key economic and sectoral policies (like proper implementation of SEA, EIA, IPCC/Industrial Directives, investment tools).

08. Turkey

8.1 Circular Economy in Turkey

Circular economy continues to be understood primarily as waste management and a recycling strategy by most of the institutions, companies, and people, but economic opportunities are far broader and more diverse. With the right enabling conditions, circular economy could provide new opportunities for economic diversification, value-creation, and skills development. Even though, circular economy is still a new topic, which has been mostly discussed in the context of plastic pollution and zero waste in Turkey, there are new developments, which prove that the business sector is interested in the topic. There are some initiatives where waste is central to the discussions while there are some others where the transformation of the production patterns is considered.

Government Perspective and Action on Circular Economy in Turkey

The Zero Waste Project was initiated in 2017 in Turkey by the Ministry of Environment and Urbanization. 18.750 public institutions joined the project and 126 tonnes of paper, 8,7 tonnes of glass were recycled while 9,1 tonnes of organic waste was composted until May 2019, as reported by the Ministry of Environment and Urbanization.[86]

In line with the vision of The Zero Waste Project, most circular initiatives in Turkey are currently based on the utilization of waste. Some Turkish recycling companies are even importing waste for recycling.[87] Turkey is the largest destination for waste exported from the EU, with a volume of around 11.4 million tonnes in 2019. This was almost three times as much as in 2004.[88] However, according to the principles of a circular economy, it would be best to eliminate waste already at the level of product design. In contrast to the current 'take, make and waste' linear economy, in a circular economy waste does not exist and all products are made to be remade. That is why the Turkish government started focusing on waste management, but the plan is gradually shifting to cover the full economic cycle now.

Figure 14. Main destinations for waste from the EU, 2019

[86] Nuroğlu, E. (2019, July 01). Döngüsel iktisat yolunda Türkiye: Sıfır Atık Projesi.

[87] Netherlands Enterprise Agency. (2019, October). To Cycle or not to Cycle Towards a circular economy in Turkey.

[88] Eurostat. (2020, April) Turkey: main destination for EU's waste.

The Ministry of Environment and Urbanization has recently started the development of "Regional Activity Center for Sustainable Consumption and Production (SCP / RAC) and Roadmap" to serve the implementation of the 2030 Agenda, to ensure the inclusion of resource efficiency practices in the industry, to encourage the development of environmentally friendly business models that support Circular Economy, and to create policy instruments that support these actions. Sustainable Consumption and Production (SCP) approach is essential for a circular economy and already aligned with the new Circular Economy Action Plan of the European Union adopted in March 2020. SCP is also directly related to the 2030 Sustainable Development Goals of the United Nations to which Turkey attaches special importance. [89] The SwitchMed program implemented by the Regional Activity Centre for Sustainable Consumption and Production (SCP/RAC) of the United Nations Environment Programme Mediterranean Action Plan (UNEP/MAP) aims at supporting SCP practices for a circular economy in the Mediterranean Region. Preparation and implementation of Sustainable Consumption and Production National Action Plans (SCP NAP) by the countries are at the core of the program. Since Turkey is a party to the Barcelona Convention targeted by SwitchMed, we started to develop our SCP NAP as of June 2019 with the

[89] MoEU (2020) Background Study In preparation of the Turkish SCP National Action Plan and Roadmap Final Draft

support of SCP/RAC.[90] In order to set a ground for the plan, this baseline report and a road map were prepared in order to evaluate related national regulations and current practices on SCP. Based on the scope and priorities determined, 4 sectors namely: food, fisheries, and agriculture; housing and construction; consumer goods and manufacturing; and tourism were selected for the study. [91]

Most small and medium-sized enterprises, in Turkey, do not want to take risks by making this kind of structural changes. They prefer to be on the safe side and continue their traditional way of manufacturing without knowing the benefits deriving fromcircular economy. Some companies are even afraid they will lose reputation if they use secondary raw materials because their products will be considered second hand. That is why the government and civil society actors shall be more encouraging for the private sector and help increase public awareness about this topic.

Role of Civil Society Institutions/ Non-Governmental Organizations

SKD (BCSD) Turkey is a leading NGO working on CE in Turkey. **Turkey Materials Marketplace (TMM) Project is a functional and innovative cloud-based platform creating economic and environmental value through cross-industry materials reuse,** which has been run through the cooperation between the Business Council for Sustainable Development (BCSD) Turkey and the Turkish Sustainable Development Association. It functions as a digital platform where industries exchange materials. It is funded by the European Bank for Reconstruction and Development (EBRD) aiming to contribute to the CE transition in Turkey. There are more than 100 companies registered on the platform. Turkey Materials Marketplace (TMM) is for example facilitating the circulation of industrial waste as secondary raw material and it is showing that companies are willing to change when some incentive is provided.

[90] Ibid

[91] Ibid

Turkey Materials Marketplace (TMM) continues to support its members in identifying potential materials transactions and assessing the feasibility of implementing materials transactions through several technical support tools. As a result of these studies, successful collaborations have been established among companies;

- Two platform members; P&G and MGD Marmara Recycling have successfully collaborated through The Circular Vouchers by completing "Re-evaluation of non-standard products, scrapped during production, for industrial purposes" project.[92]

As of May 2020, 67 tons of non-standard products (detergent, soap, toothpaste, etc.) were converted into new products that serve as cleaning agents for carpets/cars, etc.[93]

- PepsiCo, which produces energy by converting organic wastes in its biogas plant, aims to find alternative organic waste via the TMM platform and successfully collaborated with Aromsa. Through a previous transaction, 20 tons of food waste generated by Aromsa had been utilized by PepsiCo in energy production. With The Circular Vouchers (a TMM member-specific technical grant support), PepsiCo took a step further in their collaboration with Aromsa and has completed a comprehensive study to maximize process efficiency and the optimization of production specifications as well as controlling the quality. In line with the results of The Circular Voucher studies, Aromsa's additional 32 tons of waste was converted to biogas and PepsiCo has committed to regularly process Aromsa's waste thus reaching the highest efficiency in energy production. The applied study has shown that proper formulation increases biological performances of Aromsa's organic wastes in PepsiCo's processes and thus enables the production of a higher amount of electrical and heat energy. Within the collaboration established through the TMM

[92] Turkey Circular Economy Platform. (n.d.) Turkey Circular Economy Platform – 14th Transaction.
[93] Ibid

platform, Aromsa's food processing waste is periodically converted into biogas and used as energy in PepsiCo facility.[94]

Regional Environmental Center (REC) Turkey is an independent international organization. It is not-for-profit and has an unbiased structure. REC Turkey Country Office (REC Turkey) started to operate in May 2004 in Ankara. REC Turkey plays an effective role in the process of environmental problem-solving in Turkey by supporting collaboration between the government, non-governmental organizations (NGOs), private sector and other environmental stakeholders and by ensuring public participation in the information sharing and environmental decision-making processes.

REC Turkey / E-waste report

"Beyond Waste" report, which is prepared by the Regional Environmental Center (REC) Turkey with the support and cooperation of S360 and Vodafone is online. The report took a picture of both the global and national issues and aimed to create a base for the solutions to be produced to the e-waste problems in Turkey. In the following process, REC wants to produce solutions to these problems in a participatory way, especially among young people, with the "Open Innovation Platform".

8.2 Circular Economy initiatives in Turkey

As mentioned above, circular economy is still a new topic, which is mostly discussed in the context of plastic pollution and zero waste in Turkey. However, there are new developments, which prove that the business sector is interested in the topic. There are some initiatives where waste is central to the action while there are some others where the transformation of the production patterns is considered. The Ministry of Environment and Urbanization has recently started the development of "Regional Activity Center for Sustainable Consumption and Production (SCP / RAC) and Roadmap" to serve the implementation of the 2030 Agenda, to ensure the

[94] Turkey Circular Economy Platform. (2020, March) 12th Transaction: PepsiCo & Aromsa.

inclusion of resource efficiency practices in the industry, to encourage the development of environmentally friendly business models that support the Circular Economy, and to create policy instruments that support these actions.

There are important developments on the business side as well:

Arkim

Arkim Chemicals manufacturs food preservatives from natural sources of calcium. It can be utilized in various different sectors ranging from packaged food, vegetable, fruit, pharmaceutical industry, to cosmetics. It prolongs the shelf life of the products through natural ingredients and has no side effects.[95] Arkim produces food preservative from eggshell waste from the liquid-egg producing company Anako.[96] This eggshell waste would otherwise be landfilled and that is why this is a good example of closing the loop. The food preservative also has a higher value than the eggshell waste, which makes this a good example of upcycling. Additionally, the food preservative also has a biological meaning in the sense that it is environmentally friendly. Altogether, this is a perfect example of industrial symbiosis and the advantage of circular economy.[97]

Whole Surplus (Fazla Gıda)

The whole Surplus was established in 2015, with the idea of finding solutions through a technology-based initiative to the Climate Action. Carbon emissions from food waste constitute 8% of the overall emissions causing climate change. The whole Surplus was established with the aim of creating technology-based solutions to reduce food waste in the food supply chain by 50% until 2030. From the first day, they started to create food waste awareness in the private sector and aimed to set an example for the establishment of new startups.

[95] Turkey Circular Economy Platform. (n.d.) What are the examples?

[96] Turkey Materials Marketplace. (December 2018). 5th material transaction is completed!

[97] Netherlands Enterprise Agency. (2019, October). To Cycle or not to Cycle Towards a circular economy in Turkey.

The whole Surplus is an effective waste management platform for businesses. It creates economic and social value from surplus food by managing the unsold products (food) of the businesses in the most effective way.[98]

Hagelson

It is an R&D company established with the support of TÜBİTAK (The Scientific and Technological Research Council of Turkey) in March 2016. The company is mainly working on polymer materials and new recycling systems.

Thanks to its patented new technology, Hagelson manufactures new plastic raw material from the recycling of leftover and waste carpets. Thus, eliminates the problem of disposing of the woven residual carpets that accumulate during the manufacturing, the leftover parts formed in the carpet floor covering business or the old waste carpets collected during the project phase, and converts them into raw materials and returns them back to the economy.

Recycling of a 500 square meter carpet protects 12 m^2 of land and 29m^3 of water from becoming polluted while preventing 2,2 tons of CO_2 from being emitted. It also equals to the one-month energy consumption of 7,2 households. Approximately 400 kilograms of plastic raw materials can be produced from a 500 m^2 waste carpet.[99]

Komporize

Turkey's tea production ranks fifth in the world, with approximately 1.2 million tons per year. Tea fiber waste is produced during this process. The amount of tea fiber that emerges is significant as 60-70 thousand tons annually, which are not evaluated in any way and destroyed in the form of burning or being left to rot. Komporize is a start-up that is dedicated to overcoming the negative environmental impact of plastics by producing alternative biocomposite materials, using inert agricultural fiber wastes. The fiber ratio in the mixes is up to 90% depending on the place of use. Komporize aims to reduce the harm of these plastics to the environment by ensuring that these products disappear earlier in nature than other plastics. The produced raw materials appeal to companies that provide end-products

[98] Turkey Circular Economy Platform. (n.d.) What are the example?

[99] Ibid

for the automotive, furniture, construction, architecture, toys and consumer industries.[100]

Biolive

Biolive is a company that designs and develops the production process of bio-based plastics from the olive kernel, produces bio-based granules and is also currently continuing research and product development at Yıldız Technical University Technopark. It was established in 2016 as a start-up at the Istanbul Technical University Technopark. Later it became a company with the investment it received from Vestel Ventures within Zorlu Holding in 2017. Currently, the company works on bioplastic production for Vestel refrigerators. These bioplastics can be used in pet bottles, disposable cutlery and food packaging, which can be lost in nature within 3-5 months. It prevents a significant amount of plastic waste.[101]

Toyi

Toyi, an award-winning project, is a limitless creative play kit without instructions that enables children to transform everyday objects around them into unique toys. With a kit consisting of wheels, feet, hands, eyes, joints, sticks, flexible connectors kids aged 6+ can transform any object around them into a toy of their own creation. There are no instructions or rules in Toyi kits. The entire process is left to children's imagination. With the open-ended play experience Toyi provides, children can make a limitless number of toys using their creativity. Toyi supports creativity, upcycling and 21st-century skills. Toyi helps children learn upcycling through play (For example, Turn a water bottle into a six-armed robot, an old box into a train compartment or a pine cone to a cute monster etc.). With Toyi, children are making their own toys by redefining and redesigning everyday objects around them. Toyi helps children become more creative, productive and conscious consumers.

TRT-2 / Geri dönüşen sanat

[100] Netherlands Enterprise Agency. (2020, May) Circular Food Turkey.

[101] Ibid

The 6-part documentary series which is titled "Geri dönüşen sanat (Recycled art)" focused on artists who produce works of art with creative designs using waste materials, and on the harmonious transformation of recycled art, environment and nature awareness and aesthetics into art, was shown on TRT 2, a Turkish culture and art television channel.

8.3 Findings

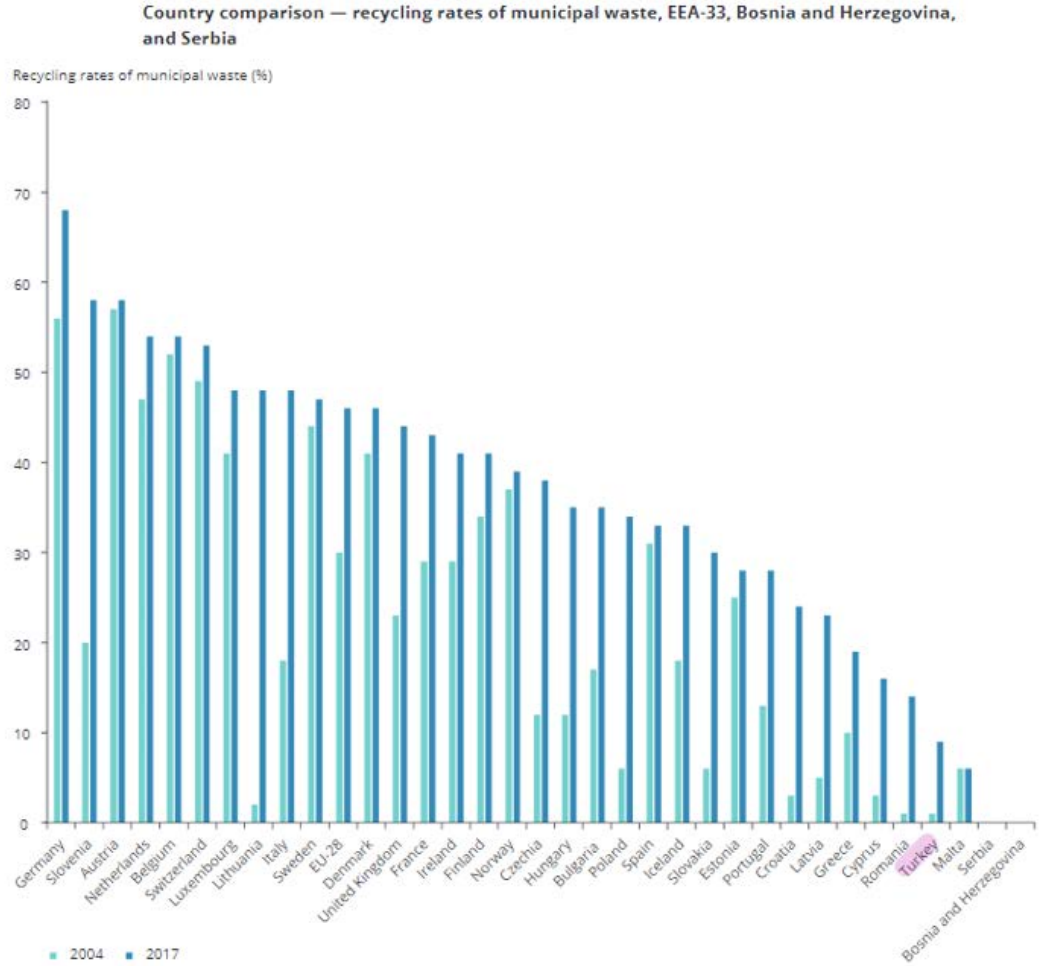
8.3.1 Production and consumption

According to the data of Eurostat, the statistical office of the European Union (EU), the EU exports of waste reached 31.0 million tons, with a value of EUR 13.4 billion in 2019. As reported by Eurostat, Turkey ranked first with 11.4 tons of waste imported from the EU, well ahead of other countries. While India ranked second by having imported 2.9 million tons of waste from the EU countries, Britain ranked third with 1.9 million tons.[172] The Ministry of Environment and Urbanization has recently started the development of "Regional Activity Center for Sustainable Consumption and Production (SCP / RAC) and Roadmap" to serve the implementation of the 2030 Agenda, to ensure the inclusion of resource efficiency practices in the industry, to encourage the development of environmentally friendly business models that support Circular Economy, and to create policy instruments that support these actions.

Waste Management

Turkey is mostly aligned with the EU Directives on waste management. However, implementation has not improved enough yet. According to the EEA report, in 2017 Turkey had the lowest recycling rates of municipal waste after Malta and Serbia in Europe.

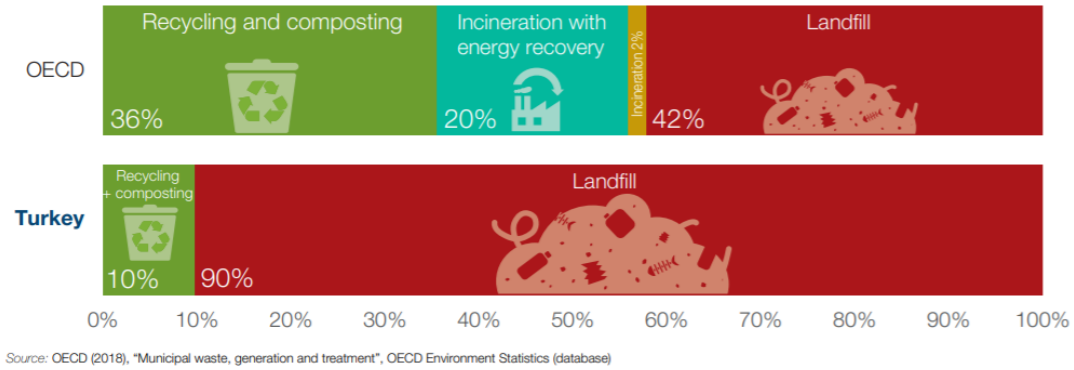
Figure 15. Country comparison relating the recycling rates of municipal waste



Some progress has been made in expanding waste treatment infrastructure. About 90% of municipal waste is sent to landfills, and only a small quantity is recovered. Only 10% of municipal waste was collected separately in 2018.[102]

[102] OECD. (2019, February) OECD Environmental Performance Reviews: Turkey: 2019.

Figure 16.Municipal waste, generation and treatment



Source: OECD (2018), "Municipal waste, generation and treatment", OECD Environment Statistics (database)

8.3.2 Secondary Raw Materials

The work on the use of secondary raw material (SRM) in Turkey is at very early stages. Most small and medium-sized enterprises in Turkey do not want to take risks and trust their traditional way of manufacturing. Some companies are even afraid they will lose reputation if they use secondary raw materials because their products will be considered second hand. That is why the government can be more encouraging for the private sector and help increase public awareness about this topic. Turkey Materials Marketplace is for example facilitating the circulation of industrial waste as secondary raw material and is showing that companies are willing to change when some incentive is provided.

8.3.3 Competitiveness and Innovation

Regarding CE, Turkey has not had a competitive and innovative profile. It is following the developments especially in Europe and aims to adapt them to Turkish legislation and implementation. The business sector has an important

role in understanding and improving the CE practices in Turkey. The business sector is interested in the concept and puts capacity for R&D and implementation. On the other hand, as stated above, companies are willing to change when some incentive is provided.

8.4 Concluding notes

Circular Economy has been mainstreaming both in European and Turkish context. There are concrete policies and implementation examples in the EU. Activities related to waste management dominate the public policy agenda in Turkey while the business sector is interested in CE as the new way of designing and making business. However, circular initiatives are not visible enough to trigger great impact such as creating jobs and adding value. The fact is that the private sector together with national and regional authorities, cities and citizens are still relatively uninformed of the potential benefits of the circular economy concept and they also need to mobilize. Information provision, awareness-raising, education, training and capacity building on the concept of circular economy should be considered. More ambitious and better coordinated circular economy policies need to be established and implemented. Strategic planning, substantial investment and stronger administrative capacity are required as well.

One of the main requirements for a CE is that different stakeholders need to work together. The government, private sector and academia can all benefit from the opportunities provided by circular economy. Moreover, cross-border partnerships can also be established. Governments could exchange knowledge on the procurement of circular economy projects and necessary legislation adoption. The private sector, NGOs and academia could work together to share best-practices about waste management and co-funding of R&D projects in this pioneering topic.

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