

# ROADMAP

Towards the Circular Economy in Montenegro





# **Roadmap Towards the Circular Economy in Montenegro**

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## Introduction

It is no secret that, globally, we are faced with limited natural resources and an ever-growing population. We are constantly pushing the boundaries of our planet, exploiting resources for our own benefit and are showing less and less understanding and responsibility for the environment that we will eventually leave to future generations. We are in dire need of gaining a clear perspective of our planet, of achieving global leadership and inclusive management and of defining clearly outlined national priorities and goals. Thus we strive to discover, explore and innovate.

The Circular Economy Roadmap has been developed in order to facilitate what is perceived as one of the underlying principles for the future development of Montenegro. It is complementary to the objectives of key strategic development and its core characteristics are portrayed in the Declaration on the Ecological State of Montenegro. Its relevance and content are closely linked to the National Strategy for Sustainable Development up to 2030, to the Smart Specialization Strategy and to various other national strategic documents. It also supports the fulfilment of various obligations towards achieving the requirements of the Sustainable Development Goals (SDGs), the Paris Agreement, the Green Agenda for the Western Balkans and other international responsibilities.

The goal of this document is to serve all elements of Montenegrin society: to *improve* the quality of life, to *motivate* those making important economic decisions to incorporate circular business models to improve the quality of their work, to *broaden* and *increase* the number of employment opportunities and to *stimulate* cultural evolution. Furthermore, its intention is to achieve *systemic change*. Thus, its aim is to *inspire a shift in the way of thinking and doing* in terms of the use of resources, as well as to *provoke decision makers to adopt a self-binding commitment* - to adjust and act on the policies they propose in accordance with the principles of a circular economy. In addition, this document should serve as a leading light; it should anticipate situations and requirements that will not simply be a matter of choice in the near future, but that will be both necessary and essential. The document, therefore, should navigate us towards achieving the main goal - for Montenegro to be ecologically sound and prosperous.

Through the process of developing the roadmap, we have benefitted greatly as a result of the engagement of a broad range of stakeholders. Their knowledge, insight and suggestions, from a wide range of areas, have been of great value. Participants were brought together through a series of different events; their hands-on knowledge and experience were collated through a combination of one-on-one meetings and online questionnaires. The efforts of all parties involved are essential in order to accelerate the transition period and to successfully achieve a well-developed circular economy. Such efforts and commitment will remain crucial throughout the entire process of implementing these principles. Moreover, all of those involved view the situation from their own unique perspective; these contributions must be carefully incorporated to create a document which is fully representative and which clearly demonstrates joint ownership and responsibility. Furthermore, in order to create a stronger focus on the main goal of improving society in all possible ways, a specific setting has been created to inspire dialogue, to establish connections and to maintain contact; the purpose of this is to encourage people to work effectively together within individual mandates and agendas, and to aspire to successfully fulfil joint ambitions. Through such action it has been clearly evident that collaboration is indeed key to adjusting and connecting the elements required to accelerate the transition to a green and circular economy.



The combined aspects of this initiative represent Montenegro's first strategic step towards achieving a circular economy; existing mechanisms and frameworks that have been identified in the document, are practices that have the potential to propel this process forward. Their impact, if and when further developed and improved, could provide a wide variety of opportunities; they could also enable supplementary action to be taken through the implementation of principles defined in this roadmap. Furthermore, comprehensive and extensive coordination, along with the adoption of actions suggested by relevant stakeholders, could have a far-reaching effect on speeding up the green transition. In particular, establishing firm connections between institutions, the business community and academia would help Montenegro to take a leading role in implementing circular practices; it would also provide the opportunity to pilot and establish solutions that could be exported elsewhere at a later date.

This process has been initiated and implemented with the understanding and acceptance that there is no one single magic formula. Recommendations for the way forward have been put together as a result of lessons learned from the experiences of other countries, by developing our findings on existing examples of good practices and by understanding our own competitive advantages and characteristics. Thus, through these methods, priority areas have been identified for successfully achieving the transition to a circular economy in Montenegro. The so-called 'Circular Triangle' model was used as the basis for furthering the process as it unites three inseparable elements - Circular Economy (business models), Circular Change (government policies) and Circular Culture (citizens). These three aspects, together, shield significant transformative capital, are interdependent and, collectively are at the very core of systemic change.

Finally, the creation of this roadmap is our very first milestone. It shows the way forward and initiates a forum for discussion, it provides opportunities to further develop priority areas and to define specific activities. With adequate support, interdisciplinary cooperation, an adequate regulatory framework and financial incentives, it could significantly enhance the visibility of Montenegro on the global 'circular map'.



## Executive summary

**The circular economy is an economic global narrative and a system of closed loops that is based on sustainable production and consumption, with systems thinking at its core.** Nowadays, in our current economy, we use raw materials and resources from our seas, rivers, solids and forests, make products out of them and in the end, we throw them away as waste, constituting a linear process. However, more efficient use of resources is needed and particularly in Europe we have to make our value chains more resilient and our economy more sustainable. With COVID-19 and the climate crisis making a deep impact on our society and economy as well as on the environment, combined with the unstable situation in Ukraine and Russia, the world needs economic and social change and an innovative, systemic approach to the use of resources and a redesign of the production and consumption processes. Such a resilient system is good not only for business, but for the people and the environment as a whole.

**The European Union is taking an important role in the transition to a sustainable and resilient economy.** With the European Green Deal, EU Taxonomy Regulation, UN Agenda for Sustainable development, New European Bauhaus initiative, the “Fit for 55” package, and the Circular Economy Action Plan, the European Union has increased its focus on the importance of a sustainable and circular transition that would benefit all. Having emphasized the importance of the involvement of the Western Balkans region in the green transition process, the EU presented the Green Agenda for the Western Balkans, including the Economic and Investment Plan for the Western Balkans, providing concrete means to stimulate and accelerate the transition to a circular economy. Accordingly, **by signing the Sofia Declaration, the leaders of Montenegro and other Balkan countries, stepped out on a journey towards future cooperation and, among other priorities, planning for a transition to a circular economy** in the Western Balkans region.

**Now is the time for Montenegro to thrive.** Montenegro’s natural resources and rich biodiversity are at the base of its circular transformation. The sustainable use of these resources through circular value systems is essential to improving the resiliency of the country and its development within planetary boundaries. Although the transition to a circular economy is still at an early stage in Montenegro, concrete steps are being made. However, there is no doubt that **the transition to a circular economy requires a systemic change and is to be understood as a continuous process.** The success of this transition depends not only on the Montenegrin government, representatives from the public administration and international organizations, but also on representatives from businesses, researchers and civil society organizations to work together to create their own path. A continuous dialogue, network governance, stronger cooperation and commitments from all Montenegrin citizens are a key enabler for transition to a circular economy based on local potentials and priorities.

For this reason, the Circular Economy Roadmap for Montenegro begins by exploring the state of play of Montenegro, the legislative setting and the unique strengths of the Montenegrin economy, but also by realizing the challenges that stakeholders are facing to fully embark on proactive changes and utilize the untapped economic and societal potential. Achieving circularity is a complex goal, so it requires the integration of different disciplines and collaboration between different value chains and stakeholders. Therefore, in its core, the Roadmap serves the purpose of **providing a strategic direction for the transition to a circular economy which is based upon systems thinking, outlining the main drivers, the horizontal and priority areas, as well as opportunities for circular transformation, and right at the very end offering recommendations for the way forward.**



In particular, **the Roadmap identifies five focus areas**, including **food and forest systems, the built environment, tourism and manufacturing** that are highly interconnected between themselves and, through the principles of industrial symbiosis and synergies, they can result in systemic change. The Roadmap identifies the **key driving factors** that derive from resiliency and self-sufficiency, innovation and economic development, unabsorbed green funding, environmental protection and restoration, to societal development and green employment. Moreover, since **different sectors are highly interdependent** when implementing circular principles, the Roadmap highlights **horizontal areas** that refer to all recognized priority areas for the circular transition of Montenegro. They include awareness and education, systemic collaboration, the legal framework, green public procurement, renewable energy, waste management, water management, the transportation system, and spatial planning, as well as digitalization and traceability.

Finally, in order to provide a **systematic overview of possible next steps** and encourage further stakeholder engagement, the Roadmap borrows the concept of the Circular Triangle (author: Circular Change) which represents **three intertwined elements enabling circular transition**, namely **Circular Change** (public policies), the **Circular Economy** (business models) and a **Circular Culture** (citizen values, narratives, and behaviours). However, while the creation of **the Roadmap and the resulting set of recommendations represent a starting point for strategic considerations of the next steps in Montenegro's transition process**, the speed of transition will largely depend on how successfully the stakeholders will jointly overcome the existing barriers. With this, we leave it up to you all to make the most of the Roadmap, utilize it for your relevant domains and contribute in collaborative efforts to accelerate Montenegro's economy and society towards a circular and sustainable economy.





## A brief overview of global challenges and trends in the circular economy

### Things worth knowing about the circular economy

The circular economy is a global economic narrative based on sustainable production and consumption, which integrates five pillars of sustainability: customer value, environmental footprint, a quality workforce, responsible management, and strong communities.<sup>1</sup> The world needs economic and social change, and an innovative, systemic approach to the use of resources and a redesign of the production and consumption processes.



Therefore, the circular economy comprises of three main pillars:

1. Production without waste and with minimal pollution;
2. Extension of the life of products in a circular manner, with a focus on circular value chains and designs;
3. Minimization (or reduction) of harm to nature.<sup>2</sup>

In particular, the well-known Ellen MacArthur Foundation's "butterfly"<sup>3</sup> diagram explains the circular economy as a rethinking process, instead of a one-size-fits-all solution. As such, the structure of the process is focused on closing the loop of materials and products in a sustainable and circular manner. The technical side of the diagram is restorative and is based on the highest-utility process of materials

1 *The definition of the circular economy is extracted from the speech of Mr. Dr. Janez Potocnik, the Co-Chair of the UN International Resource Panel at the World Steel Association's Circular Economy Conference in Brussels as concluding points.* Source: YouTube, Worldsteel, "Dr. Janez Potocnik - Circular economy concept and global trends", 24.5sec., <https://www.youtube.com/watch?v=ePvEe1BFfuE>

2 Ellen MacArthur Foundation, "Circular Economy Introduction.", [https://ellenmacarthurfoundation.org/topics/circular-economy-introduction/overview?gclid=CjwKCAiAs92MBhAXEiwAXTi256GpdAhBV Ta6a9UZpzPCF7gKELC6ETRqMeY-c6I2d-464VVBo-eNfNB0C4owQAvD\\_BwE](https://ellenmacarthurfoundation.org/topics/circular-economy-introduction/overview?gclid=CjwKCAiAs92MBhAXEiwAXTi256GpdAhBV Ta6a9UZpzPCF7gKELC6ETRqMeY-c6I2d-464VVBo-eNfNB0C4owQAvD_BwE)

3 Ellen MacArthur Foundation, "Circular Economy Diagram.", <https://ellenmacarthurfoundation.org/circular-economy-diagram>



and products through maintaining, refabricating (focused on a good-as-new or better-than-new standard), re-using and recycling to close the loop. The biological side of the diagram is regenerative and is based on using materials and returning them to nature in a safe manner.

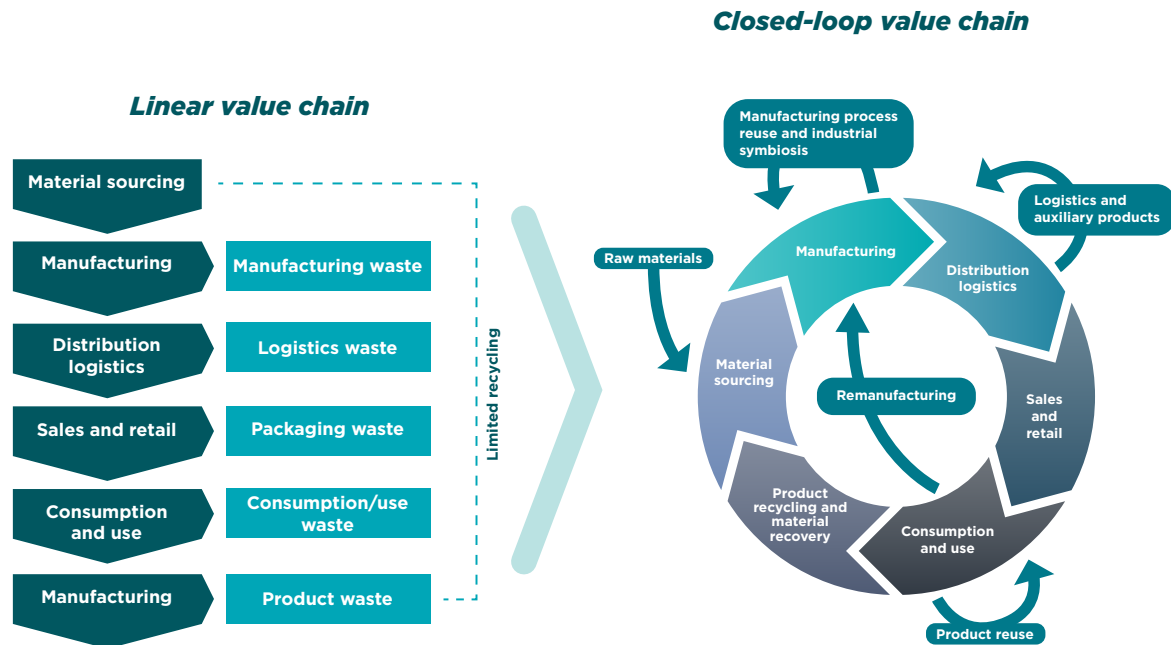


Figure 1: Linear vs. circular value chain  
Source: Deloitte

Based on the global market's point of view, it has been estimated that a circular economy model may yield up to \$4.5 trillion in economic benefits by 2030.<sup>4</sup> A circular economy is better for society – it provides a balance between economic and environmental needs and creates opportunities (employment and business) by promoting creativity, innovation and environmental rehabilitation. At the same time, the environmental benefits imply that this economic model in the long term will be able to contribute to the restoration and regeneration of natural resources and help resolve the climate crisis. Linear production is becoming unsustainable in the 21st century because of the irrational extraction of natural resources and the consumption of fossil fuels. According to Eurostat's reports, only 12% of materials used in the EU come from recycling<sup>5</sup>. In particular, global consumption of materials such as biomass, fossil fuels, metals and minerals is expected to double in the next 40 years,<sup>6</sup> while annual waste generation by 2050 is projected to increase by 70%.<sup>7</sup> Despite improvements in recycling rates, the impact of certain waste materials – such as metals, plastics, textiles, food, electric and electronic equipment, batteries and more – is taking its toll on the environment and human health.<sup>8</sup> In 2019, over 92 billion tonnes of materials were extracted and processed, including plastics, textiles, food, electronics and

4 World Economic Forum, "Circular Economy and Material Value Chains.", <https://www.weforum.org/projects/circular-economy>  
5 Eurostat. *Circular economy in the EU: Record recycling rates and use of recycled materials in the EU.*, <https://ec.europa.eu/eurostat/documents/2995521/9629294/8-04032019-BP-EN.pdf/295c2302-4ed1-45b9-af86-96d1bbb7acb1>  
6 OECD, *Global Material Resources Outlook to 2060 - Economic Drivers and Environmental Consequences*, <https://www.oecd.org/publications/global-material-resources-outlook-to-2060-9789264307452-en.htm>  
7 Kaza, Yao, Bhada-Tata, Van Woerden. *What a Waste 2.0: A Global Snapshot of Solid Waste Management to 2050*, World Bank, p 24., <https://openknowledge.worldbank.org/handle/10986/30317>  
8 Ibid.



more – contributing to about half of global CO<sub>2</sub> emissions.<sup>9</sup> **To keep our world habitable and thriving, global circularity needs to be doubled from 8.6% to 17%.<sup>10</sup>**

The OECD provides a dynamic tool that helps governments follow up the progress of implementation of a circular strategy. It is called an Inventory of Circular Economy Indicators and it brings together 474 circular-economy-related indicators.<sup>11</sup> The inventory provides an overview of circular economy measurement frameworks. In particular, it helps identify measurement gaps and can be a source of inspiration for governments wishing to develop or use indicators to improve circular-economy-related policies.<sup>12</sup> The categories and subcategories of indicators from the OECD Inventory<sup>13</sup> are shown in Figure 2.



Figure 2: OECD Inventory categories and subcategories

Source: OECD

## The global context calling for local action

COVID-19 and the climate crisis are having a deep impact on society and economy, as well as on the environment. During the first wave of the COVID-19 crisis, as a result of the restrictions on the movement of people and goods, the global value chain was disrupted. It consequently caused the biggest economic recession in recent history, demonstrating global fragility and the increased dependence on global interconnectivity. As such, policy makers began understanding the need to act collaboratively

9 World Economic Forum "Circular Economy and Value Chains.", <https://www.circularity-gap.world/2021#downloads>

10 CIRCLE Economy. *The Circularity Gap Report* - 2021. p 40. <https://www.circularity-gap.world/2021#downloads>

11 OECD, *The OECD Inventory of Circular Economy Indicators*.

12 Ibid, 3.

13 Ibid, 4.



to achieve the mutual goal of a carbon-neutral economy based on a circular-economy-driven transition in order to enable a full and sustainable economic recovery after COVID-19.

The UN General Assembly, held in September 2015 in New York, adopted the Agenda for Sustainable Development, coining the term Sustainable Development Goals (SDGs), with the aim of improving actions to benefit people and the planet, and promoting prosperity. The concept of a circular economy supports the progress of implementation of the Agenda 2030 through its design to balance human, financial and environmental capital. Therefore, the circular economy is perceived as an inspiring concept that promises to achieve 11 out of the 17 Sustainable Development Goals. Accordingly, the Agenda for Sustainable Development is one of the key elements for a systemic approach to a sustainable world.<sup>14</sup>

In 2015, with the Paris Agreement,<sup>\*</sup> a new approach was developed to the reduction of greenhouse gases (GHGs) and climate change. Under this convention, a signatory state is obliged to contribute to a reduction in greenhouse gas emissions. That contribution requires social and economic transition at a local level. World leaders and other partners are looking for solutions to prevent resource misuse, minimize the impact of the climate crisis and prevent natural disasters in the world. **This goal addresses three key topics at the same time: net-zero pollution, the circular economy and a science-based limit of global warming to no more than +1.5 °C.** All these topics are intersectorally connected and can only be attained through a systemic approach, good planning and governance. Accordingly, the topic of the circular economy has become recognized as not only a choice, but a necessity for global leaders, the market, international companies and decision makers all over the world after ratification of the Paris Agreement.

### Did you know that circular economy holds promise for achieving multiple Sustainable Development Goals?



<sup>14</sup> The 11 priority SDGs that are connected with the circular economy are based on the work of the joint publication of: NL Netherlands Platform, Netherlands Enterprise Agency, Holland Circular Hotspot. Circular Economy & SDGs - How circular economy practices help to achieve the Sustainable Development Goals. [https://circulareconomy.europa.eu/platform/sites/default/files/3228\\_brochure\\_sdg\\_-\\_hch\\_cmyk\\_a4\\_portrait\\_-\\_0520-012.pdf](https://circulareconomy.europa.eu/platform/sites/default/files/3228_brochure_sdg_-_hch_cmyk_a4_portrait_-_0520-012.pdf)

<sup>\*</sup> Full text of the Paris Agreement, [https://unfccc.int/sites/default/files/english\\_paris\\_agreement.pdf](https://unfccc.int/sites/default/files/english_paris_agreement.pdf)





## Europe aiming to become a beacon for the circular economy

The European Union is taking an important role in the transition to a sustainable and resilient economy. In 2019, the EU presented its main strategy for long-term systemic change – the **European Green Deal** (EUGD) by 2050.<sup>15</sup> It is a strategy that incorporates the SDGs from the UN 2030 Agenda, decarbonization and, at the same time, it underlines a social and ecological transition to a modern, digital and circular-economy society that leaves no one behind. Therefore, in order for the EUGD to successfully achieve its targets (climate neutrality, decoupling of growth, resource efficiency and solidarity), sectoral interconnection and consistency in the implementation of EU policies need to be achieved.

In addition, the EU Taxonomy Regulation that entered into force on 12 July 2020<sup>16</sup> plays a very important factor in the transition to a sustainable economy. The purpose of the EU Taxonomy is to translate the climate and environmental objectives from the EUGD into clear criteria for green activities of investors and companies. It is a common economic frame of reference to support the efforts in the financing of projects that are already sustainable or that are in transition, thus preventing greenwashing.<sup>17</sup> Being a live document, the purpose of the EU Taxonomy, as an economic tool, is to align investors' activities with the principles of the circular economy as a central point, setting up the substantial contribution objectives and climate and environmental criteria that have to be met. As such, the circular economy taxonomy prescribes a set of definitions and criteria specific to economic activities and sectors which must be outlined.<sup>18</sup> It lays out six EU environmental objectives, namely: climate change mitigation, climate change adaptation, sustainable use and protection of water and marine resources, *transition to a circular economy*, pollution prevention and control, and the protection and restoration of biodiversity and ecosystems.<sup>19</sup> These environmental and sustainable objectives, as well as the reliability and comparability of sustainability information, aim to place different investors and all stakeholders within a common language to stipulate transition and sustainable investments.

Moreover, the EUGD is tied with the New European Bauhaus initiative that aims to bring cultural and creative dimensions to stimulate a growing movement.<sup>20</sup> In particular, it promotes the way sustainable innovation can offer tangible improvements to everyday lifestyles, focusing on sustainability, aesthetics and inclusion.

The interlinked sectoral policy should define the key barriers and workable solutions to overcome them. With this objective, the EU adopted **the Circular Economy Action Plan** (CEAP) in March 2020.<sup>21</sup> The CEAP is a future-oriented agenda for regulatory harmonization, streamlining and synchronization of legislative activities. Such activities include: sustainable productivity, key value chain products, a shift from waste to resource management – with less waste and more value, monitoring the progress of activities as well as crosscutting actions for climate mitigation, decarbonization and energy transition.

15 European Commission. *COMMUNICATION FROM THE COMMISSION - The European Green Deal*. <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1576150542719&uri=COM%3A2019%3A640%3AFIN>

16 European Commission. "EU taxonomy for sustainable activities.", [https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/eu-taxonomy-sustainable-activities\\_en#:text=The%20Taxonomy%20Regulation%20was%20published,to%20qualify%20as%20environmentally%20sustainable](https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/eu-taxonomy-sustainable-activities_en#:text=The%20Taxonomy%20Regulation%20was%20published,to%20qualify%20as%20environmentally%20sustainable)

17 European Commission. *FAQ: What is the EU Taxonomy and how will it work in practice?*, [https://ec.europa.eu/info/sites/default/files/business\\_economy\\_euro/banking\\_and\\_finance/documents/sustainable-finance-taxonomy-faq\\_en.pdf](https://ec.europa.eu/info/sites/default/files/business_economy_euro/banking_and_finance/documents/sustainable-finance-taxonomy-faq_en.pdf)

18 Ramboll. "Circular Economy Taxonomy: Why we need to speak the same language.", <https://ramboll.com/ingenuity/circular-economy-taxonomy-why-we-need-to-speak-the-same-language>

19 European Commission. *FAQ: What is the EU Taxonomy and how will it work in practice?*, [https://ec.europa.eu/info/sites/default/files/business\\_economy\\_euro/banking\\_and\\_finance/documents/sustainable-finance-taxonomy-faq\\_en.pdf](https://ec.europa.eu/info/sites/default/files/business_economy_euro/banking_and_finance/documents/sustainable-finance-taxonomy-faq_en.pdf)

20 European Commission. "New European Bauhaus: new actions and funding to link sustainability to style and inclusion.", [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_21\\_4626](https://ec.europa.eu/commission/presscorner/detail/en/ip_21_4626)

21 European Commission. *A new Circular Economy Action Plan - For a cleaner and more competitive Europe.*, <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1583933814386&uri=COM:2020:98:FIN>



The CEAP is harmonized with the European Industrial Strategy and stipulates initiatives along the entire lifecycle of products. It targets the way that products are designed, promotes the processes of the circular economy, encourages sustainable consumption, and aims to ensure that waste is prevented and that the resources used are kept in the EU economy for as long as possible.<sup>22</sup>

The four core themes of the Circular Economy Action Plan 2020 are:

- Make sustainable products the norm in the EU;
- Empower consumers;
- Focus on the lifetime of products; and
- Ensure less waste;

In parallel with the policy actions tailoring the transition, the EU is providing a financial framework to support such a transition which includes:

- The Sustainable Europe Investment Plan;<sup>23</sup>
- The Just Transition Mechanism, making sure no one is left behind;<sup>24</sup> and
- Investing in a climate-neutral and circular economy.<sup>25</sup>

Under the “Fit for 55” package, the EU is drawing up climate, energy, land use, transport and taxation policies aimed at reducing net greenhouse gas emissions by at least 55% by 2030, compared to 1990 levels, to bring them into line with the targets agreed in the European Climate Law.<sup>26</sup> Thus, the package is a comprehensive and interconnected set of legislation with the intention of accelerating the reduction of greenhouse gas emissions. The new legislative package includes a spread combination of measures and targets with the objective of preventing carbon leakage and with tools to preserve and grow natural carbon sinks.<sup>27</sup> Further legislative documents related to circularity are being developed by the European Commission (Eco-Design Directive, Textile Strategy, Sustainable Products Initiative, Circular Electronic Initiative, among others).

## Concrete moves based on circular economy roadmaps

The European Circular Economy Stakeholder Platform (ECESP), established in 2017 by the European Economic and Social Committee (EESC), in partnership with the European Commission, is contributing to the implementation of the Circular Economy Action Plan (CEAP). The ECESP supports civil society organizations and public authorities to accelerate the transition to a circular economy across Europe by fostering dialogue, sharing knowledge and exchanging good practices.<sup>28</sup>

22 European Commission. *Circular economy action plan: for a cleaner and more competitive Europe*. <https://op.europa.eu/en/publication-detail/-/publication/45cc30f6-cd57-11ea-adf7-01aa75ed71a1/language-en/format-PDF/source-170854112>

23 European Commission. *Sustainable Europe Investment Plan - European Green Deal Investment Plan*. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020DC0021>

24 European Commission. “The Just Transition Mechanism: making sure no one is left behind.” [https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/finance-and-green-deal/just-transition-mechanism\\_en](https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/finance-and-green-deal/just-transition-mechanism_en)

25 European Commission. “Investing in a climate-neutral and circular economy.” [https://ec.europa.eu/commission/presscorner/detail/en/fs\\_20\\_40](https://ec.europa.eu/commission/presscorner/detail/en/fs_20_40)

26 Interreg Europe. “Commission launches the Fit for 55% Package.” [https://www.interregeurope.eu/policylearning/news/12610/commission-launches-the-fit-for-55-package/?no\\_cache=1&cHash=a371af17736f1f2f09030ee45e7dd6f2](https://www.interregeurope.eu/policylearning/news/12610/commission-launches-the-fit-for-55-package/?no_cache=1&cHash=a371af17736f1f2f09030ee45e7dd6f2)

27 For more details and mentioned legislation, please see: European Commission. *‘Fit for 55’: delivering the EU’s 2030 Climate Target on the way to climate neutrality*. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52021DC0550>

28 Godina Košir, and Cutaia. “Circular Economy Stakeholder Platform: the ECESP model.” <https://www.eai.enea.it/archivio/rivoluzione-economia-circolare-sommario/circular-economy-stakeholder-platform-the-ecesp-model.html>



Below are some of the best examples of countries in Europe that are circular economy frontrunners:

**Slovenia** was one of the first CEE countries to promote the transition to a sustainable production and consumption model with a circular economy narrative. In May 2018, the Ministry of Environmental and Spatial Planning and Circular Change, presented its **Roadmap towards a Circular Economy in Slovenia**. Based on the model of the Circular Triangle (the Circular Economy, Circular Culture and Circular Change), recommendations for key stakeholders have been introduced. As priority segments for circular transformation, the Food System, Mobility, the Manufacturing Industry and Forest-Based Value Chains have been recognized. Subsequently, the Circular Change Institute, as a network governance body, has been working intensely in Slovenia and worldwide, including in the Western Balkans region. It is a global frontrunner engaged in the promotion of transition reaching out to different regional frontrunners and stakeholders. Slovenia's presidency of the EU put into focus the transition to a circular economy, emphasizing the importance of regional interconnectivity. Stories of Slovenian and international circular economy practitioners have been introduced in the special lifestyle publication "Circular Insider" (by Circular Change). Circular Change is also a partner of the Holland Circular Hotspot Network and several other international circular networks.

**The Netherlands** is one of the leading countries in the area of the circular economy in Europe. The Dutch government has an ambitious project to **become a country 100% based on the circular economy by 2050**. "A Circular Economy in the Netherlands by 2050" sets out the actions and strategies to be carried out to manage raw materials, products and services more efficiently. As part of this plan, in 2018 it approved a series of transition agendas focusing on five sectors, including the construction sector, which accounts for 50% of raw material consumption in the country. By 2030, resource use is expected to be reduced by 50% and, by 2050, a 100% circular and waste-free economy is expected.

**Holland Circular Hotspot** is a private-public platform in which companies, knowledge institutes and (local) authorities collaborate to promote and support international collaboration and knowledge exchange on the Netherlands' circular economy.

**Finland** was the first country in the world to prepare a national circular economy roadmap, under the leadership of **Sitra, the Finnish Innovation Fund**.

The **Circular Economy Roadmap 2016-2025** provided a plan to move the country away from a 'make-take-waste' linear economy model to one that protects resources and eliminates waste along value chains. In its second edition, Finland updated its plans to reform its economic model to ensure a successful circular transformation.

Sitra is one of the leading global organizations for transitioning to a circular economy. Sitra is working on **helping countries all over the world to find a way to make their own circular transition**. Today, Finland has a variety of ongoing circular economy activities in different sectors, a governmental programme for advancing the circular economy, and the highest number of circular economy higher education courses in the world.



## Great opportunity for the Western Balkans

The EU has emphasized the importance of the involvement of the Western Balkans region in the green transition process. It can be seen as an opportunity and challenge for a new, innovative sustainable approach for the countries of the Western Balkans. After adopting and introducing the EUGD, the EU's actions and policy concept, in October 2020, the EU presented the Green Agenda for the Western Balkans (GAWB), including the Economic and Investment Plan for the Western Balkans (EIPWB).<sup>29</sup> The EIPWB is expected to mobilize approximately €9 billion in grant funding<sup>30</sup> and up to €20 billion in guaranteed investments over the next 10 years through grants and guarantee funds.<sup>31</sup>

In particular, the EIPWB will focus on:<sup>32</sup>

1. Infrastructure links for transport and energy connections, market integration and cross-border trade in the region and with the EU;
2. Green and digital transition; and
3. Competitiveness of the private sector with special attention to innovation.

Furthermore, on 10 November 2020 in Sofia, the leaders of countries from the Balkan region signed the **Sofia Declaration on the Green Agenda for Western Balkans** focusing on five pillars: Decarbonization; the Circular Economy; Depollution; Sustainable Agriculture; and Protection of Nature and Biodiversity.<sup>33</sup> Additionally, on 4 October 2021 in Sarajevo, the leaders of the Balkan countries signed the **Action Plan for the Sofia Declaration**<sup>34</sup> (hereafter Action Plan for the Western Balkans – APWB), which will be the leading document for future cooperation and planning for a transition to a circular economy in the Western Balkans region. Following the green criteria guided by the green sustainable approach, each country from the WB region needs to develop its own path to implement its own planned circular economy activities and define its potential priority sectors. Full implementation of this regional strategic document will require adequate technical assistance, knowledge sharing and financial support.

29 European Commission. *An Economic and Investment Plan for the Western Balkans*. [https://ec.europa.eu/neighbourhood-enlargement/system/files/2020-10/communication\\_on\\_wb\\_economic\\_and\\_investment\\_plan\\_october\\_2020\\_en.pdf](https://ec.europa.eu/neighbourhood-enlargement/system/files/2020-10/communication_on_wb_economic_and_investment_plan_october_2020_en.pdf)

30 IPA III as a key source of financial assistance for the region including EIP. For more information please see: Ibid, 1.

31 Ibid, 6.

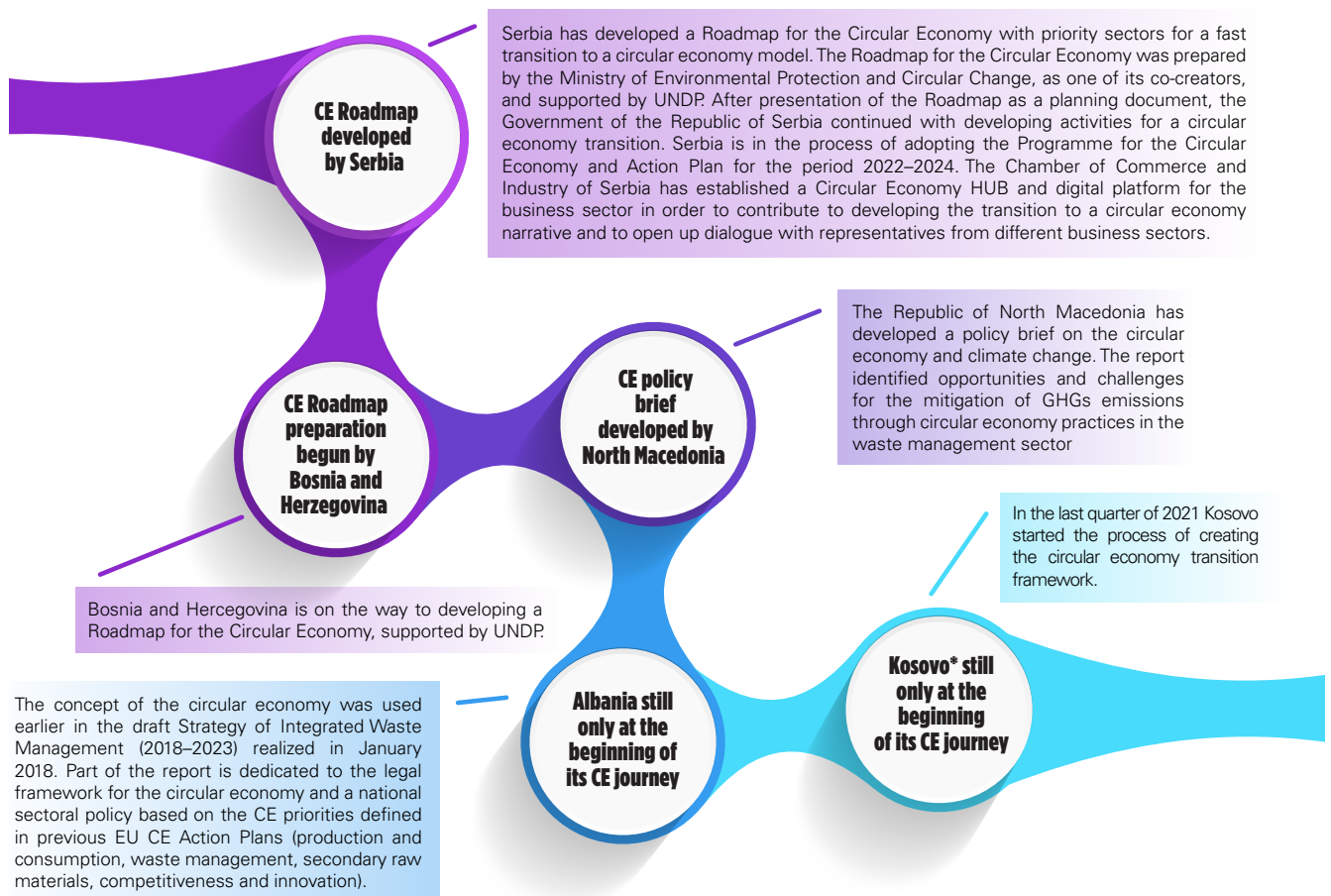
32 For more details, please see: Ibid, 23–28.

33 Regional Cooperation Council. *Sofia Declaration on the Green Agenda for the Western Balkans*. <https://berlinprocess.info/wp-content/uploads/2021/02/Leaders-Declaration-on-the-Green-Agenda-for-the-WB.pdf>

34 Regional Cooperation Council. *ACTION PLAN FOR THE IMPLEMENTATION OF THE SOFIA DECLARATION ON THE GREEN AGENDA FOR THE WESTERN BALKANS 2021-2030*. <https://balkangreenenergynews.com/wp-content/uploads/2021/10/GAWB-ACTION-PLAN-Final-04.10.2021.pdf>



## Circular economy transition activities in the Western Balkans economies



## State of play of the circular economy in Montenegro

### The time is right for Montenegro to thrive

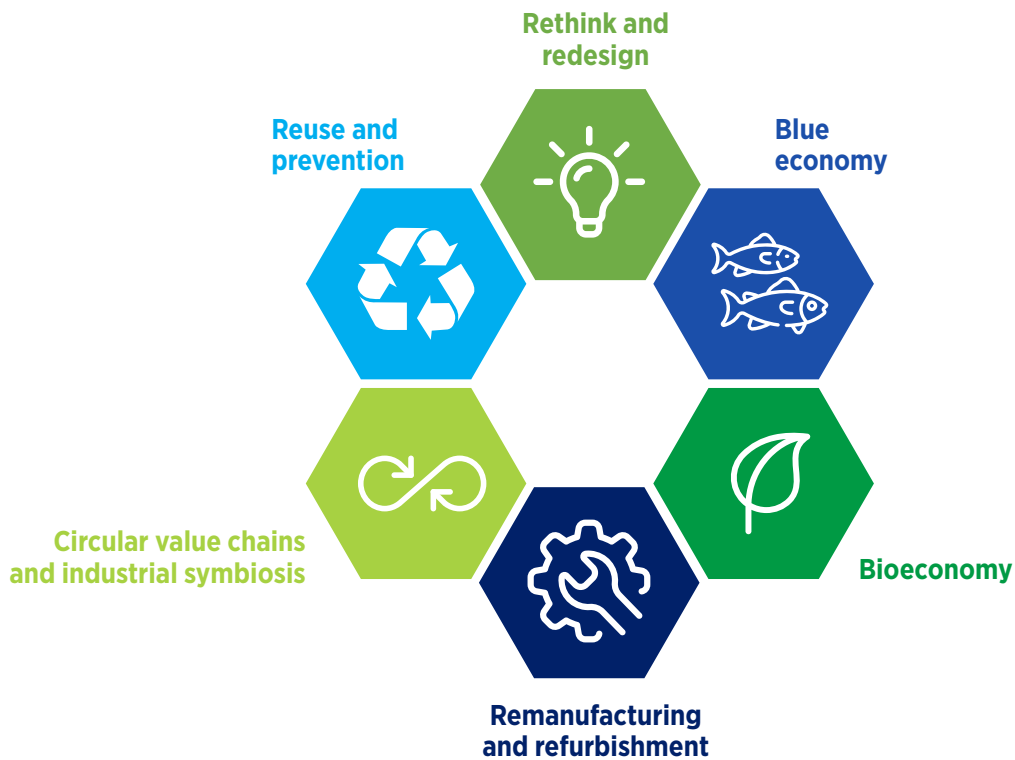
A mapping of public policy and the legal framework in Montenegro was done for the purpose of reviewing the state of play of the context of the circular economy in Montenegro. Based on the gathered findings and literature review (for more details see Appendix 1), the transition to the circular economy is at an early stage in Montenegro. The National Strategy for Sustainable Development by 2030 has been recognized and it goes on to provide a narrative for the circular economy. Recognizing the importance of transition, the Strategy highlighted a priority strategic goal – to improve waste management through implementation of circular economy principles. This is not the only public policy which recognizes the need for a transition towards a circular economy: among other policies that provide a starting point for creating a Roadmap for the Circular Economy are: the Smart Specialization Strategy of Mon-

\* All references to Kosovo, whether to the territory, institutions or population, in this text shall be understood in full compliance with United Nations' Security Council Resolution 1244 and without prejudice to the status of Kosovo.



tenegro 2019-2023, Industrial Policy of Montenegro 2019-2023, National Waste Management Plan of Montenegro 2015-2020, Waste Management Strategy of Montenegro until 2030 and the Energy Development Strategy of Montenegro 2014-2030.

However, strategic documents in Montenegro observe the circular economy through waste management lenses, focusing on recycling, landfill management and separate waste collection. The need for resource efficiency is viewed only through the aspects of energy efficiency and waste-to-energy. Important aspects of the circular economy that have not been completely addressed in existing public policy documents and shall be integrated in the future are:





## Starting point – legislation

Circular Economy (CE) actions, the state of play of legal instruments and recommendations for inter-connection with other policy documents and legislation for the use of taking the first steps towards a circular economy transition are presented below:

<b>Sustainable products</b>	<b>Ban single-use plastic products on the market</b>	<b>Review of the Industrial Emissions Directive</b>	<b>Designing sustainable products</b>
<p><b>Propose minimum mandatory norms based on voluntary legal instruments</b></p> <ul style="list-style-type: none"> <li>- Prescribe minimum green standards for suppliers based on EU eco-design directive</li> <li>- Develop legal norms for energy labelling</li> <li>- Develop a monitoring system for producers, including digital tools for monitoring</li> </ul>	<p><b>Prepare a roadmap for transition including the list from the annex of EU Directive 2019/904</b></p> <ul style="list-style-type: none"> <li>- Transpose Directive (EU) 2019/904 into the Montenegro legal system by proposing legal and other relevant implementing measures to achieve the goals of the Directive</li> </ul>	<p><b>Develop goals from the Industrial Strategy for Montenegro</b></p> <ul style="list-style-type: none"> <li>- Prescribe best available techniques (BATs) for clean production and develop decarbonization tax legislation</li> </ul>	<p><b>Develop standards on durability</b></p> <ul style="list-style-type: none"> <li>- Establish eco-design requirements</li> <li>- Introduce EPR schemes (extended producer responsibility) for material tracking</li> </ul>
<b>Empowering consumers and public buyers</b>	<b>Legislative and non-legislative measures for right-to-repair</b>	<b>Circularity in production processes</b>	<b>Key product value chains</b>
<p><b>Disseminate good practices and initiatives for public buyers</b></p> <ul style="list-style-type: none"> <li>- Establish minimum obligatory green public procurement criteria with mandatory reporting</li> <li>- Establish minimum criteria for product material passports</li> </ul>	<p><b>Ensure that local and import products have the same standards</b></p> <ul style="list-style-type: none"> <li>- Stimulate transparent information between producers of spare parts, tools and repair manuals to consumers</li> </ul>	<p><b>Facilitate industrial symbiosis by reporting</b></p> <ul style="list-style-type: none"> <li>- Introduce an industry voluntary reporting system for certification</li> <li>- Include tax policy for promotion of circular processes</li> <li>- Promote the implementation of bioeconomy principles</li> </ul>	<p><b>Establish sustainable principles to reach recycling goals</b></p> <ul style="list-style-type: none"> <li>- Develop a monitoring system for the Law on Waste Management in Montenegro and improve implementation.</li> <li>- Promote state aid for SMEs to support the creation of green products</li> </ul>
<b>Electronics and ICT equipment</b>	<b>Batteries and vehicles</b>	<b>Packaging</b>	<b>Plastics - key products: Packaging, construction materials and vehicles</b>
<p><b>Establish sustainable principles to reach recycling goals</b></p> <ul style="list-style-type: none"> <li>- Develop a monitoring system for the Law on Waste Management in Montenegro and improve its implementation.</li> <li>- Promote state aid for SMEs to support the creation of green products</li> </ul>	<p><b>Establish sustainable principles to reach recycling goals</b></p> <ul style="list-style-type: none"> <li>- Include sustainable smart mobility in the new draft Law on Spatial Planning</li> <li>- Improve the monitoring of the implementation of waste streams of batteries and vehicles</li> </ul>	<p><b>Ensure that local and imported products follow the same standards and requirements</b></p> <ul style="list-style-type: none"> <li>- Set up mandatory requirements to reduce overpackaging with legal and financial instruments</li> <li>- Plan transposition of the Plastic Strategy including legal measures for non-recycled plastic packaging waste</li> </ul>	<p><b>Promote plastic waste prevention and potential of raw material use</b></p> <ul style="list-style-type: none"> <li>- Set up the mandatory requirements for plastic products: labelling, standardization and certification</li> <li>- Introduce obligatory measures for the reusability and recycling of materials</li> </ul>
<b>Textiles</b>	<b>Construction and buildings</b>	<b>Food, water and nutrients</b>	<b>Waste management policy in a circular context</b>
<p><b>Promote textile waste prevention and public campaign for a second-hand textiles market</b></p> <ul style="list-style-type: none"> <li>- Introduce an EPR scheme</li> <li>- Improve the monitoring of the implementation of textile waste legislation</li> <li>- Promote state aid for a second-hand textiles market</li> </ul>	<p><b>Prescribe a public policy on brownfield investments</b></p> <ul style="list-style-type: none"> <li>- Improve monitoring implementation of construction and demolition waste legislation</li> <li>- Introduce state aid to develop construction and demolition recycling</li> </ul>	<p><b>Stimulate local organic production</b></p> <ul style="list-style-type: none"> <li>- Develop a bioeconomy strategy and action plan for setting targets to reduce food waste</li> <li>- Improve implementation of legislation for wastewater treatment in the agricultural sector</li> </ul>	<p><b>Enforce legal, financial legislation and technological norms to achieve recycling rates</b></p> <ul style="list-style-type: none"> <li>- Develop monitoring mechanisms for waste reduction with circular economy principles</li> <li>- Improve the infrastructure of primary waste collection and recycling</li> <li>- Implement EPR schemes</li> </ul>



## Inter-ministerial collaboration for a successful implementation

The transition to the circular economy requires a continuous process of systemic change. The success of the transition depends on network governance which has to be independent, informative, inclusive and fair for all the relevant stakeholders.<sup>35</sup> **However, the onus is not only on the government and representatives from the public administration and international organizations, but also on representatives from businesses, researchers and civil society organizations to work together to create their own path.** Network governance is needed in order to align the interests of ecosystem participants, thereby helping to put the circular economy into practice. Each of these stakeholder representatives has a role in this complex transition process.

Therefore, the Ministry of Ecology, Spatial Planning and Urbanism and the Ministry of Economic Development are the leading governmental stakeholders, but this is a joint mission of the whole government based on its responsibilities.<sup>36</sup> Through the deployment of policy instruments, the government can steer the change in the desired directions and facilitate compliance of stakeholders. It is necessary to build up the trust of the whole society. With joint action and the systemic implementation of transitional activities towards the circular economy, there will be an opportunity to anticipate and manage challenges\* associated with the circular transition reflected through social aspects (e.g. the labour market) and economic development. This is evidenced by the previous experience and good practice of successful implementation of the circular economy, which are built on the strong foundation of collaboration and synchronized planning activities of all stakeholders. This can be done through continuous dialogue, stronger cooperation and commitments to support transition activities for the business sector and other relevant stakeholders. In addition, provision of funds to enhance governance models to support those who implement them, as well as the planning of activities implementations should include rights for future generations.

35 Amsterdam Economic Board. *How Network Governance Powers the Circular Economy: Ten Guiding Principles for Building a Circular Economy, Based on Dutch Experiences*. p 51. [http://assets.ctfassets.net/fqjwh0badmlx/1elraV8llz6bCeHJVntNF0/3d1b3fda50f0b-ce1062ad1c043972c68/Network\\_governance\\_for\\_Circular\\_Economy\\_web\\_version.pdf](http://assets.ctfassets.net/fqjwh0badmlx/1elraV8llz6bCeHJVntNF0/3d1b3fda50f0b-ce1062ad1c043972c68/Network_governance_for_Circular_Economy_web_version.pdf)

36 Government Decree on the Organization and Manner of Work of the State Administration ("Official Gazette of Montenegro", Nos. 118/2020, 121/2020, 1/2021 and 2/2021); Government of Montenegro, Ministry of Finance and Social Welfare. *Uredba o organizaciji i nacinu rada drzavne uprave*. <https://www.gov.me/en/documents/9724d63c-490a-495d-acd3-16f221df493>

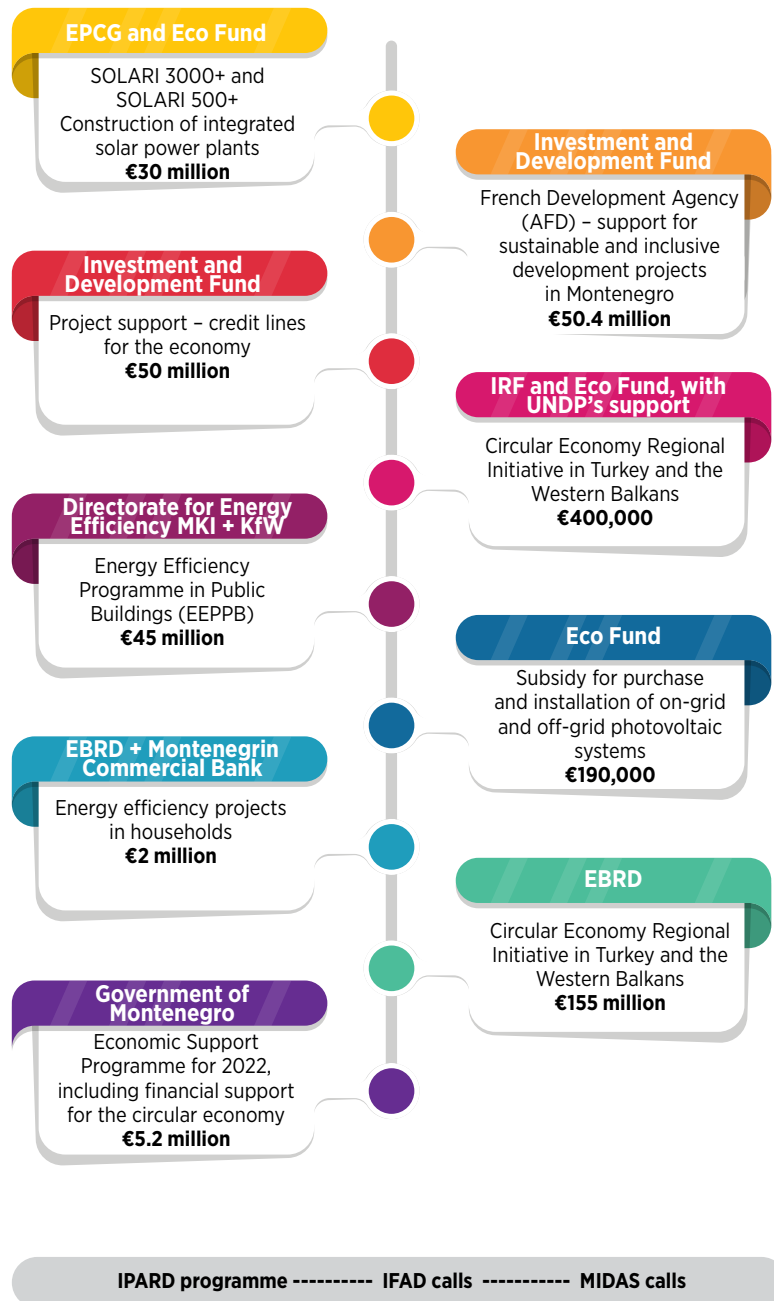
\* For a detailed overview of the challenges for different groups of stakeholders, please see the section "The power is in the hands of each stakeholder".





## Money makes change happen

The financial opportunities for all stakeholders interested on embarking on a circular economy transition are presented below. They cover the existing financial support tools and the upcoming ones, as of 31 March 2022.\*





\* For more details regarding the specific conditions, please refer to Appendix 2. Please note that this list of financial sources is non-exhaustive, it serves solely for the illustrative purpose of representing the currently selected set of projects and is subject to change in the future months. Regarding the details on how to apply, please visit each institution's website.



## Collaboration is the key

In order to fill in the existing skillset gaps and successfully set off on the journey towards the transition to the circular economy, all stakeholders' strengths and capabilities need to be utilized to establish a coherent, interactive and systemic collaborative network. The stakeholder classification and their respective roles that play a crucial part in the transition towards the circular economy are presented below. For more information on the stakeholder mapping, please see [Appendix 3](#).

 <p><b>Public administration, institutions and international organizations</b></p>	<ul style="list-style-type: none"><li>- Embrace their unique position to lead and influence the transition to a circular economy.</li><li>- Implement recommendations for a circular transition.</li><li>- Allocate public funds and promote other funding opportunities to create revenues for circular economy projects.</li><li>- Pave the way for innovation that will support the development of a circular economy.</li><li>- Prescribe minimum green standards for products and services.</li></ul>
 <p><b>Business</b></p>	<ul style="list-style-type: none"><li>- Recognize the value, benefits and potential of circular new business models, and rethink its definition of growth and responsibility for maintaining resource value.</li><li>- Implement circular solutions/opportunities on the ground.</li><li>- Encourage consumers to rethink their values and change everyday behaviour.</li><li>- Promote and implement local and regional value chains.</li><li>- Stimulate industrial symbiosis and encourage multisector collaboration.</li><li>- Invest in research and development.</li><li>- Promote green pioneers.</li></ul>
 <p><b>Research and education</b></p>	<ul style="list-style-type: none"><li>- Introduce the circular economy into formal curricula across different academic fields to support the creation of circular skills.</li><li>- Encourage collaboration between research and industry to create circular solutions.</li><li>- Utilize new technological opportunities to innovate and contribute to the acceleration of the transition to a circular economy.</li><li>- Increase awareness in the area of the circular economy and sustainability.</li></ul>
 <p><b>Civil society</b></p>	<ul style="list-style-type: none"><li>- Accelerate the transition to a circular economy by demanding circular solutions.</li><li>- Advocate for citizens by promoting environmental protection and implementation of laws and public policy, organizing public speeches, campaigns and trainings, protecting consumers rights, etc.</li><li>- Embrace change and rewrite the definition of well-being (i.e. by focusing on the use and reparability of products rather than their ownership and newness).</li><li>- Promote eco-friendly tourist destinations and sustainable lifestyles.</li></ul>



## The power is in the hands of each stakeholder

Below is included a stakeholder assessment, where the main strengths and challenges are considered, which serves for the purpose of understanding the positive steps that Montenegro has made on its journey towards the circular economy transition, but also for highlighting the existing challenges that each stakeholder is facing to fully embark on proactive changes within their respective domains.



### Strengths

- Montenegro adopted the Declaration on the Ecological State on 20 September 1991.<sup>37</sup>
- The draft of the National Strategy for Sustainable Development (NSSD) in 2006 was followed by Montenegro's official adoption of the NSSD until 2030 in 2015.<sup>38</sup>
- Montenegro committed to transition to a green agenda and stepped up into the process of creating a Circular Economy Roadmap involving the SDG goals set in Agenda 2030.
- Through the existing framework for CE implementation, Montenegro started recognizing waste as a resource by understanding the terms 'energy efficiency', 'smart specialization' and 'sustainable development'; however, this needs to be improved.
- As one of the key steps towards EU candidacy, Montenegro committed itself to working towards making Europe climate neutral by 2050 by signing the Sofia Declaration on a Green Agenda for the Western Balkans,<sup>39</sup> and committed itself to taking forward the Economic and Investment Plan at the European Union–Western Balkans Summit in Brdo pri Kranju, as well as the Action Plan for the WB.<sup>40</sup>
- The Government of Montenegro established an Eco Fund in 2018 to enable the financing and providing technical support to the projects and programmes related to the field of the environment, energy and climate change.<sup>41</sup>
- Recognized the potential for better cooperation with the private sector by having the basis for creation of innovative solutions through the adopted smart specialization strategy,<sup>42,43</sup> and establishment of the Innovation Fund in 2021.
- The government recognized the high potential of reducing CO2 emissions due to the large variety of Montenegro's natural resources.

### Public administration, institutions and international organizations



### Challenges

- The level of understanding of the new circular economy paradigm/concept and the new circular resource approach among decision makers needs to be improved.
- In current strategies, the Waste Management Strategy and Industrial Policy of Montenegro 2019–2023 concept of industrial symbiosis has not been recognized.
- Within strategies, the Circular Economy concept is only viewed through waste management, but the principle of extended producer responsibility has not been recognized in law (the new draft Law on Waste Management recognizes this legal instrument).
- Lack of a holistic (intersector) approach by the government. Need for human capacities to coordinate the intersector approach for the circular economy.
- The strategies and policies related to transition to circular economy are in their initial stages.
- Need for the government to utilize the strong potential for sustainable forest management, bioeconomy and blue economy – marine resources.
- Following the Law on Local Self-Government, local authorities'\* representatives need to be involved in the legislative and policy processes. For the purpose of the circular economy transition, the cooperation and dialogue between national and local authorities needs to be stronger, especially taking into the account role of the local authorities in this process and the importance of the CE transition of cities and regions.

37 Parliament of Montenegro. "Parliament to mark 30th anniversary of adopting Declaration on the Ecological State." <https://www.skupstina.me/en/articles/parliament-to-mark-30th-anniversary-of-adopting-declaration-on-the-ecological-state>

38 Government of Montenegro, Ministry of Ecology, Spatial Planning and Urbanism, *National Strategy for Sustainable Development of Montenegro*. <https://www.gov.me/en/documents/6852d215-af43-4671-b940-cbd0525896c1>

39 European Commission, "Launching the Green Agenda: EU support in decarbonizing the Western Balkans." <https://ec.europa.eu/jrc/en/science-update/eu-support-decarbonising-western-balkans>

40 European Commission, "EU-Western Balkans Summit in Brdo reaffirms European perspective and strategic engagement in the region." [https://ec.europa.eu/neighbourhood-enlargement/news/eu-western-balkans-summit-brdo-reaffirms-european-perspective-and-strategic-engagement-region\\_en](https://ec.europa.eu/neighbourhood-enlargement/news/eu-western-balkans-summit-brdo-reaffirms-european-perspective-and-strategic-engagement-region_en)

41 UN Eco House. "Go Carbon Neutral". <https://lowcarbonmne.me/en/financial-mechanisms/eco-fund>

42 European Commission, "European Neighbourhood Policy and Enlargement Negotiations – Montenegro Report 2021." [https://ec.europa.eu/neighbourhood-enlargement/system/files/2021-10/18102021\\_factograph\\_montenegro.pdf](https://ec.europa.eu/neighbourhood-enlargement/system/files/2021-10/18102021_factograph_montenegro.pdf)

43 Government of Montenegro, "Crna Gora prva zemlja nakon zemalja EU koja je usvojila Strategiju pametne specijalizacije." <https://www.gov.me/clanak/202742--crna-gora-prva-zemlja-nakon-zemalja-eu-koja-je-usvojila-startegiju-pametne-specijalizacije>

\* There are 24 local authorities in Montenegro.



### Strengths

- Increasing acknowledgement of the importance of multisector cooperation (education and research) and industrial symbiosis.
- Digitalization (digital platforms) recognized as a useful tool for developing industrial symbiosis and resource exchange.
- Subsidies and grants are increasing for the private sector to support the transition towards the circular economy.
- Green entrepreneurship is growing with the preservation of cultural heritage in the agrifood and tourist sectors. Green Key welcomed in the tourist sector.
- Potential of alternative sources of energy are recognized due to high electricity prices.
- Potential of development of local (regional) value chains in markets.
- Large opportunity for businesses to pioneer in green practices and attract a growing customer base.

### Business



### Challenges

- Business and bureaucratic barrier in using one industry's waste as a resource to another industry.
- The local market does not recognize green businesses' potential. This poses significant barriers for the circular economy transition especially for smaller businesses that struggle to remain in the market as opposed to larger businesses.
- Lack of awareness and knowledge about opportunities pertaining to the circular economy transition.
- Deficit of human resources in all industries to fully support the circular economy transition.
- Lack of economic diversification with concentrations in services.
- Lack of waste management infrastructure and waste management service for some materials.
- Prevailing strong dependency on imports.
- The predominant small scale of businesses and secondary raw material flows.
- The low level of modernization of technologies and practices.
- Poor traceability limiting the information available to manage circular resources.
- Need from private sector to reduce CO2 emissions.
- Ongoing wastewater management issues for many private-sector businesses due to lack of institutional barriers. Lack of awareness on water consumption and usage monitoring.<sup>44</sup>
- Greenwashing risks and challenges for responsible businesses.
- Weak national and regional industry cooperation at the moment.
- The market for certain natural resources has become volatile, as the dominant role of traditional sectors is largely export-oriented.<sup>45</sup>
- Insufficient investment in the development of small and medium-sized enterprises,<sup>46</sup> hence they lack the courage and financial and human resources to go towards the circular economy transition.

44 Private-sector companies, interviews by Deloitte and Circular Change, online, 4-18 October 2021.

45 Government of Montenegro, Ministry of the Economy. *Strategy - Development of the Manufacturing Industry of Montenegro 2014-2018*. <https://wapi.gov.me/download/0b651576-3f84-491c-b3a8-a310000e5205?version=1.0>

46 Ibid.



### Strengths

- Montenegro registered on the Smart Specialization (S3) platform in August 2017 and adopted Smart Specialization Strategy in 2019.<sup>47</sup>
- Recognized importance of innovations for a transition to the Circular Economy and Sustainable Development (at university and in strategy).<sup>48</sup>
- Initiatives, infrastructure and basic funds secured for students to help with idea development and implementation.<sup>49</sup>
- Significant work done on raising awareness in the area of sustainability and adapting curricula in line with sustainable architecture and civil engineering.<sup>50</sup>
- Central place of new ideas, innovation and new ways of rethinking, in both social and technological sciences.
- Connection established with the business sector.
- Market needs growing for potential areas of IT, tourism, food production and environment.
- Research in sustainable agriculture recognized as one of the potential of investments in the circular economy business model.
- Digitalization recognized as the main tool.

### Research and Education



### Challenges

- Academia and research usually observed through lenses of providing theoretical knowledge, but they require further recognition to be a partner for the innovation process and ideas for the private sector.
- The curriculum system in other university fields (besides civil engineering and food management) still lacks adaptation of the circular economy concepts.
- Need for stronger regional collaboration between educational and research institutions.
- Need for interactive cooperation with the business sector and training opportunities to meet green market skills and knowledge.
- Required financial support from the government towards promotion of innovative ideas.
- Low utilization of scientific research potential due to the slow growth in use of specialist knowledge for innovation.<sup>51</sup>



### Strengths

- Strong consumer power – the other side of the coin from extended consumer responsibilities.
- Ability to prevent the negative impacts of raised prices of final goods and services on the local market by doing analysis and presenting to society (all stakeholders) that investments for circular economy should not necessarily impact the price of final goods and services.
- Customers prone to following global trends and starting to demand responsible production, thus starting new market trends.
- Advocating for circular changes among Montenegrin citizens and support from the government to demand a change in regulation.
- Tourist customer segment appreciates eco-friendly touristic destinations, no matter what the type of tourism.
- Growing interest towards the ICT profession and adapting to digitalization.
- Increased awareness and gained habits among consumers employed in private-sector businesses that have internal policies and implement circular practices.
- EU transition will force consumers to change their habits based on new policy requirements.

### Civil Society



### Challenges

- Lack of consumer education on their consumer rights to be able to dictate the terms of their relationship with the private sector.<sup>52</sup>
- Lack of circular consumer culture that would pose market requirements and trigger substantial changes from the private sector.
- Lack of appreciation of cultural heritage and locally produced products.
- Lack of awareness of resource and ecosystem protection.
- Lack of understanding of the benefits that the circular economy provides for consumers.
- Prejudice from local consumers regarding purchasing second-hand/repaired products.
- Consumer prejudice that prices dictate quality.
- Need for strong advocacy that the utilization of sophisticated technologies to accelerate circular transition does not necessarily impact the emergence of job losses, poorly paid jobs and an underqualified workforce.
- Lack of adequate education and skillset to requalify the workforce for upcoming green jobs can consequently raise the costs of green job employment.

47 Government of Montenegro, *Smart Specialization Strategy of Montenegro 2019–2024*. <https://www.gov.me/en/documents/18205a91-1afc-4eb7-a5cb-8ad5bd0b7712>

48 University of Donja Gorica, interview by Deloitte and Circular Change, online, 11 November 2021.

49 Ibid.

50 Ibid, University of Donja Gorica, University of Montenegro

51 Government of Montenegro, Ministry of the Economy. *Strategy – Development of Manufacturing Industry of Montenegro 2014–2018*. <https://www.gov.me/en/documents/18205a91-1afc-4eb7-a5cb-8ad5bd0b7712>

52 Private-sector companies, interviews by Deloitte and Circular Change, online, 4–18 October 2021.







## This is what bothers me, a Montenegrin citizen

It is of the utmost importance that all stakeholders embark on a joint journey, share a common vision and form a coalition for the circular economy to collaboratively contribute to the creation of a sustainable ecosystem. In order to achieve the common mission of making circular changes and creating a circular culture, it is essential to understand the main pains that Montenegrin citizens are facing.\*

I need greater support and incentive from the government to fully redesign my business model.

I would like to reduce my production costs but I do not know where to find available and appropriate resources.

I am too often faced with a lack of access to adequate knowledge.

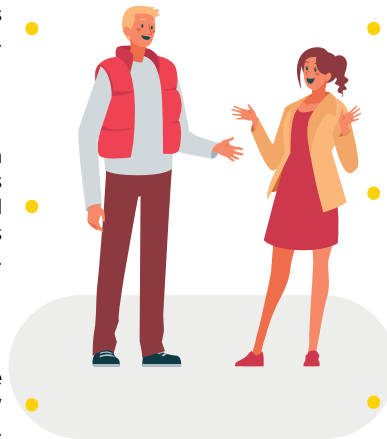


I do have the appropriate technology to recycle and redesign excess products. It is too costly.

I want to start my own green business but I do not have the appropriate skills.

Keeping up with my consumption and waste disposal is too inconvenient – it requires too much effort on my part.

I often find myself in the situation where I want to rent certain products (i.e. a tool kit) for a short period instead of buying them, but then such services are not offered in my town.



I want to partner up with a reliable company but I am afraid that it will be too risky if my company becomes too dependent on the business partner.

I want to dispose of my waste responsibly but do not know where, how and where it ends up.

Why would I pay more for eco-friendly products when I have no information on how such waste will be handled?

I would like to have more information and knowledge about my consumer rights to help me change.

I sometimes get annoyed with so many different services being offered by a company. I enjoy a simple purchase process.

I wish I had the opportunity to repair my stuff instead of always needing to buy new things.

I am a designer and I enjoy upcycling products, but have never come across a suitable platform nor general interest to monetize it.

Source: Deloitte and Circular Change

\* Please note that this representative analysis is based on the feedback gathered from stakeholders and solely serves the purpose of representing the overall feelings of Montenegrin citizens.





## The strategic direction for the transition towards a circular economy in Montenegro

### Focus areas and circular opportunities

Five focus areas for the circular transition of Montenegro were identified during the process of creating the roadmap through literature review and feedback from stakeholder activities.\* They are the following:



Food system



Forest system



Built environment



Tourist sector



Manufacturing sector

Circularity in itself is a complex goal and requires the integration of different disciplines and collaboration between different value chains and stakeholders. The five areas of focus are highly interconnected between themselves and, through the principles of industrial symbiosis and synergies, they can bring systemic change to Montenegro (Figure 3).

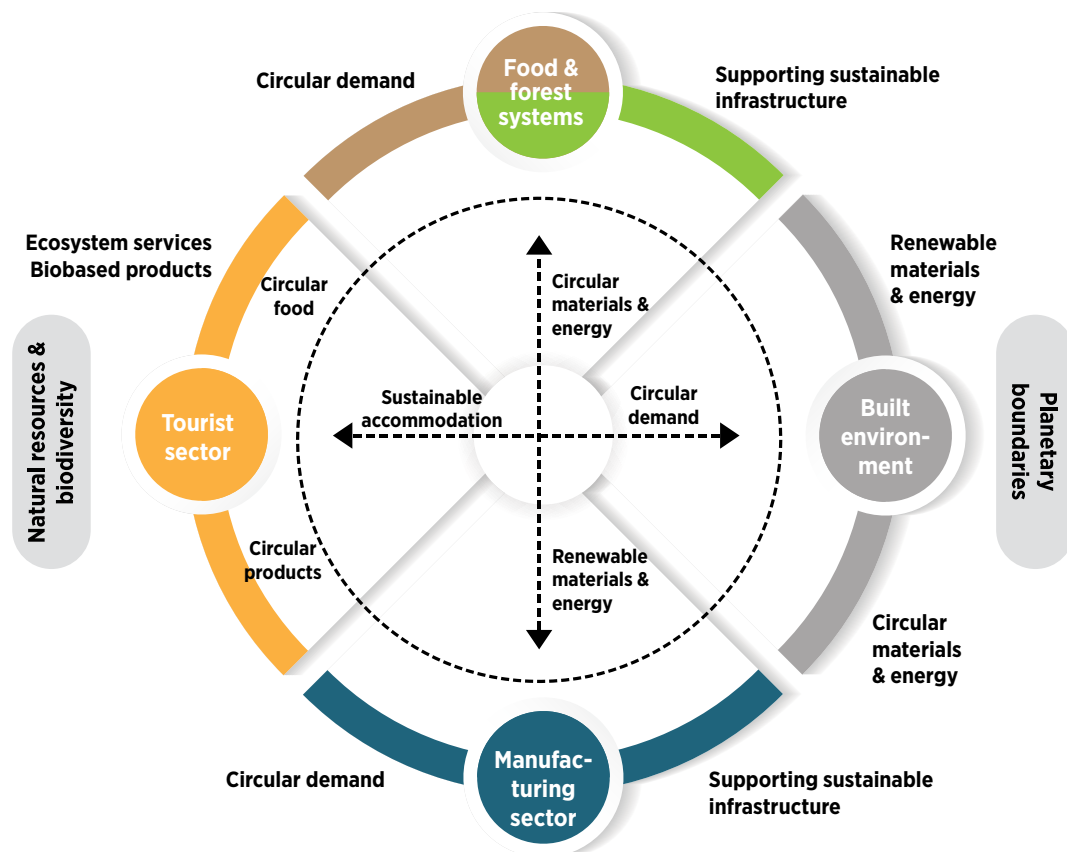


Figure 3: The circular system of Montenegro (simplified)

Source: Deloitte and Circular Change

\* Please view Appendix 1 for a full overview of the activities.



Montenegro's natural resources and rich biodiversity are at the base of its circular transformation. The sustainable use of these resources through circular value systems is essential in order to improve the resiliency of the country and its development within planetary boundaries.<sup>53</sup>

The transition to a circular economy is multi-layered and cross-sectoral and, as such, needs to be addressed through systems thinking.

## Drivers of circular transformation

The circular transition of Montenegro will be driven by several factors. This chapter presents the main points.

### Resiliency and self-sufficiency

In spite of its rich natural resources, the Montenegrin economy is characterized by the high import levels of food, raw materials and products from other markets. In some cases (e.g. wood), low-added-value products are exported only to be then imported as high-added-value ones. This untapped potential and import dependency create a strong need for **resiliency** and **self-sufficiency**, which could be achieved through circular value chains, and significantly contribute to the added value and international competitiveness of the actors engaged.

### Innovation and economic development

The need for **modernization** and **innovation** is recognized in the Montenegrin private sector. The circular challenges, coupled with the desire to become more **competitive** and **productive**, can steer the country towards modernization through the development of circular solutions, circular value systems, new business models and the strengthening of local value chains. Circular innovation can be supported by digital innovation and digital solutions.

### Unabsorbed green funding

There are numerous **green fund** initiatives provided by the different international organizations present in Montenegro. For accessing these funds, meeting the requirements of sustainability, circularity, and biodiversity will be essential. Capacity building for the private and public sectors for the preparation of circular projects will be crucial to be able to absorb these funds in the future.

### Environmental protection and restoration

The rich and diverse natural resources can, on the one hand, contribute to economic development but, on the other, are threatened by current unsustainable practices and the level of technology. This creates a need for **protection and restoration** that can be satisfied through implementation of circular value systems, assuring long-term competitiveness and resilience.

### Societal development and green employment

There is a growing need for **green jobs** and competences which can steer the system towards the implementation of circular solutions and the development of new knowledge and skills to address the opportunities that lie ahead. The people of Montenegro can be one of the country's main assets towards this circular transition.

53 The concept of planetary boundaries was developed in 2009. Rockström, J., Steffen, W., Noone, K., Persson, Å., Chapin III, F. S., Lambin, E., ... & Foley, J. (2009). Planetary boundaries: exploring the safe operating space for humanity. *Ecology and society*, 14(2). <https://pubs.giss.nasa.gov/abs/ro06010m.html>



## Horizontal areas that enable circular transition



Figure 4 – Horizontal enabling area  
Source: Deloitte and Circular Change

Since different sectors are highly interdependent when implementing circular principles, it is necessary to highlight those horizontal areas that refer to all recognized priority areas for Montenegro's circular transition. Of course, in each sector there are specifics related to the integration of horizontal areas, but generally, it can be understood that those areas introduced below are highly relevant for each economic segment.

### Awareness and education

Awareness and education are important, for both the public and private sectors. Consumers are the ones making the choices and, through their everyday lives, they influence the market. Businesses from all economic activities (especially the focus areas) will be the ones implementing circular solutions on the ground. But Montenegro will also need the public sector and public governance for a successful systemic circular transition. Multiple initiatives are needed: campaigns to raise awareness, integration of the circular economy throughout the whole educational system, as well as the development of research and scientific exchange.



### Systemic and collaborative approach towards circular transition

A circular transition is to be understood as a systemic transformation. It touches different disciplines and sectors and concerns every segment of society, economy and nature. For Montenegro, a small economy based on micro and small enterprises, a circular transition is only possible when true collaboration among different stakeholders takes place. In this way, different actors, resources, skills and disciplines are brought together to develop circularity.

### Legal framework

The circular economy and overall sustainability need to be supported by a clear investment framework (e.g. legislation and public policies). This framework should provide clear guidelines and binding requirements for businesses and be aligned with EU regulations and directives, such as the EUGD. The fulfilment of EU requirements would mean fulfilling the Sofia Declaration as well. There is also a need for legal norms that would protect the local economy and its natural resource by setting up minimum binding thresholds. This would prevent environmentally harmful investments and business initiatives that are not aligned with such requirements. Finally, because of the complexity, the legislation should be well synchronized and harmonized.

### Circular procurement

The government can play an active role by promoting the circular economy through public procurement procedures. These procedures currently do not incorporate requirements on the disclosure of the sources and types of raw materials used in the purchased products and services. Including circularity among the criteria of purchasing could encourage the market to transition to circular solutions and thus be a significant advocate for the circular economy.

### Renewable energy

A complete circular economy framework requires a comprehensive approach to resource efficiency – not just the use of raw materials, but also energy sources. Therefore, the use of different renewable energy sources, such as solar, wind and biomass, should integrate circular value systems and circular solutions. It is important to note that alternative sources are becoming more and more sustainable alternatives to fossil fuels. At the same time, the primary focus should be on the optimization of energy use.

### Waste management

Waste is a resource. An efficient and effective waste management system is the basis of a circular economy. This would include at least the development of adequate solutions for waste minimization and reduction, improving reuse, waste source separation, extended producer responsibility (EPR) schemes, efficient waste collection systems, improving recycling and recyclability, and reducing land-filling. These practices could strengthen the market of secondary raw materials in Montenegro and feed resources into the circular economy. Transparency and traceability, combined with a supportive legislative framework, are crucial for a successful shift from waste to resource management.

### Water management

Montenegro's water resources are rich; however, the availability and accessibility of water may be threatened by climate change, the mishandling of waste, overexploitation, a lack of monitoring, and untreated wastewater. The switch from mere use to water management\* practices can support circular value chains, reduce pressure on the ecosystem, lower costs and provide greater resiliency to the Montenegrin economy.

\* Water management includes water reuse, water treatment for reuse and water efficiency.



### Sustainable transport systems

The transport sector can significantly contribute to the circular transition of Montenegro and support the focus areas through better accessibility and connectivity. Transport can have a great impact on overall sustainability and facilitate the implementation of the circular economy by providing sustainable infrastructure, circular mobility and intermodality. This can be complemented by the maintenance, refurbishing and recycling of the components of vehicles and ships, as well as new, innovative green and circular mobility solutions (e.g. intermodal systems, including railways, mobility sharing, etc.).

### Sustainable spatial planning

Sustainable spatial planning is needed to support urban and rural development. Spatial planning can be a supportive tool of circular solutions. To this purpose, it should be developed and implemented with a systemic approach to address the characteristics and needs of territory, the focus areas and their stakeholders.

### Digitalization and traceability

Data and information on the use of resources are needed to ensure the traceability and monitoring of resources (raw materials, water, energy and waste, among others) through the entire value chains. The availability and accessibility of such data and the capability to transform it into useful information will serve to build a strong foundation that can support stakeholders to carry out the circular transition. In this context, innovation in the field of digitalization can enhance the potential of data and information.

## Priority areas for circular transformation

### The food system

#### Why the food system?



#### More than 38% of agricultural land Second largest per capita in Europe

- 88% pastures and meadows
- 12% arable land, orchards, and vineyards

Source: National Strategy of Montenegro for Agricultural and Rural Development 2015–2020

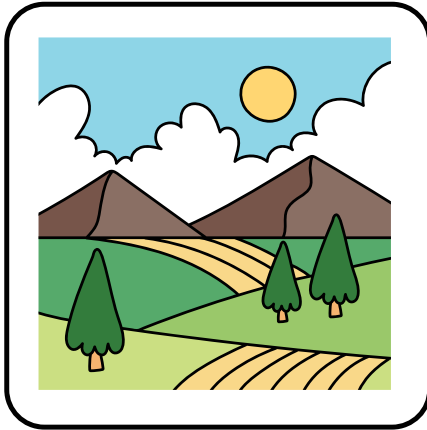
The food system of Montenegro is composed of the sectors of agriculture, fisheries, aquaculture and food processing. These sectors play a very important role in the economy of the country and are essential for rural development. In 2019, agriculture contributed more than 6% to the annual GDP while contributing less than 3% to the total national employed workforce.<sup>54, 55</sup>

54 MONSTAT Montenegro Statistical Office. *Gross domestic product of Montenegro in 2020.*, [http://monstat.org/uploads/files/Nacionalni%20racuni/BPD/2020/Annual%20GDP%202020\\_eng.pdf](http://monstat.org/uploads/files/Nacionalni%20racuni/BPD/2020/Annual%20GDP%202020_eng.pdf)

55 The World Bank. "Agriculture, forestry and fishing, value added (% of GDP) – Montenegro.", <https://data.worldbank.org/indicator/NV.AGR.TOTL.ZS?locations=ME>



The country has fertile agricultural land and a coastline which extends almost 300 km along the Adriatic Sea. Its ecosystem has plenty of water resources, a diverse climate and **a high biodiversity** – one of the highest in Europe. Furthermore, Montenegro has a rich **cultural heritage** regarding the production of food. Some of Montenegro's main products are meat and its derivatives (e.g. Njeguši prosciutto), dairy and wine, as well as cereals and fruits.<sup>56</sup>



It is estimated that nearly **13–15,000 ha** of **lowlands** are threatened by overflows and 18,000 ha of agricultural land has an **underdeveloped drainage system**.

Source: *National Strategy of Montenegro for Agricultural and Rural Development 2015–2020*

Despite the variety of the domestic food production, the system is characterized by high imports of food products and raw materials. Most of the businesses working on fisheries, aquaculture and agriculture are **micro-enterprises\* and SMEs**. The agricultural land is divided into small farms and is characterized by a high level of **fragmentation**. Additionally, the **food security** and **resiliency** of the food system are threatened by climate change's pressure on resources like water and soil.<sup>57, 58</sup>

Montenegro has recognized the importance of the food system by including its sectors in the **priority areas**<sup>59</sup> of development of the country. It is also being addressed by different national strategies.<sup>60</sup>

56 Government of Montenegro, Ministry of Agriculture, Forestry and Water Management. *National Strategy for Agriculture and Rural Development 2015–2020*. <https://www.eu.me/download/1650/11-poljoprivreda-i-ruralni-razvoj/20264/strategija-razvoja-poljoprivrede-i-ruralnih-podrucja.pdf>

\* Including subsistence farms.

57 Delegation of the European Union to Montenegro. *The European Union's IPA Programme for Montenegro: SEA of Montenegro's National Climate Change Strategy (NCCS)*. <https://europa.eu/capacity4dev/file/86283/download?token=RXWgmldp>

58 Government of Montenegro, Ministry of Agriculture, Forestry and Water Management. *National Strategy for Agriculture and Rural Development 2015–2020*. <https://www.eu.me/download/1650/11-poljoprivreda-i-ruralni-razvoj/20264/strategija-razvoja-poljoprivrede-i-ruralnih-podrucja.pdf>

59 Government of Montenegro, Ministry of Finance. *Montenegro Development Directions 2018–2021*. <http://roads.meteo.co.me/practices/Montenegro-Development-Directions-2018-2021-1.pdf>

60 Ibid., Government of Montenegro, Ministry of Agriculture, Forestry and Water Management. *National Strategy for Agriculture and Rural Development 2015–2020*, Government of Montenegro, Ministry of Agriculture, Forestry and Water Management. *Fisheries Strategy of Montenegro 2015–2020 with Action Plan for the transposition, implementation and enforcement of the acquis.*, Government of Montenegro, Ministry of Sustainable Development and Tourism. *National Sustainable Development Strategy 2030 (NSSD)*.



## What does a circular food system look like?

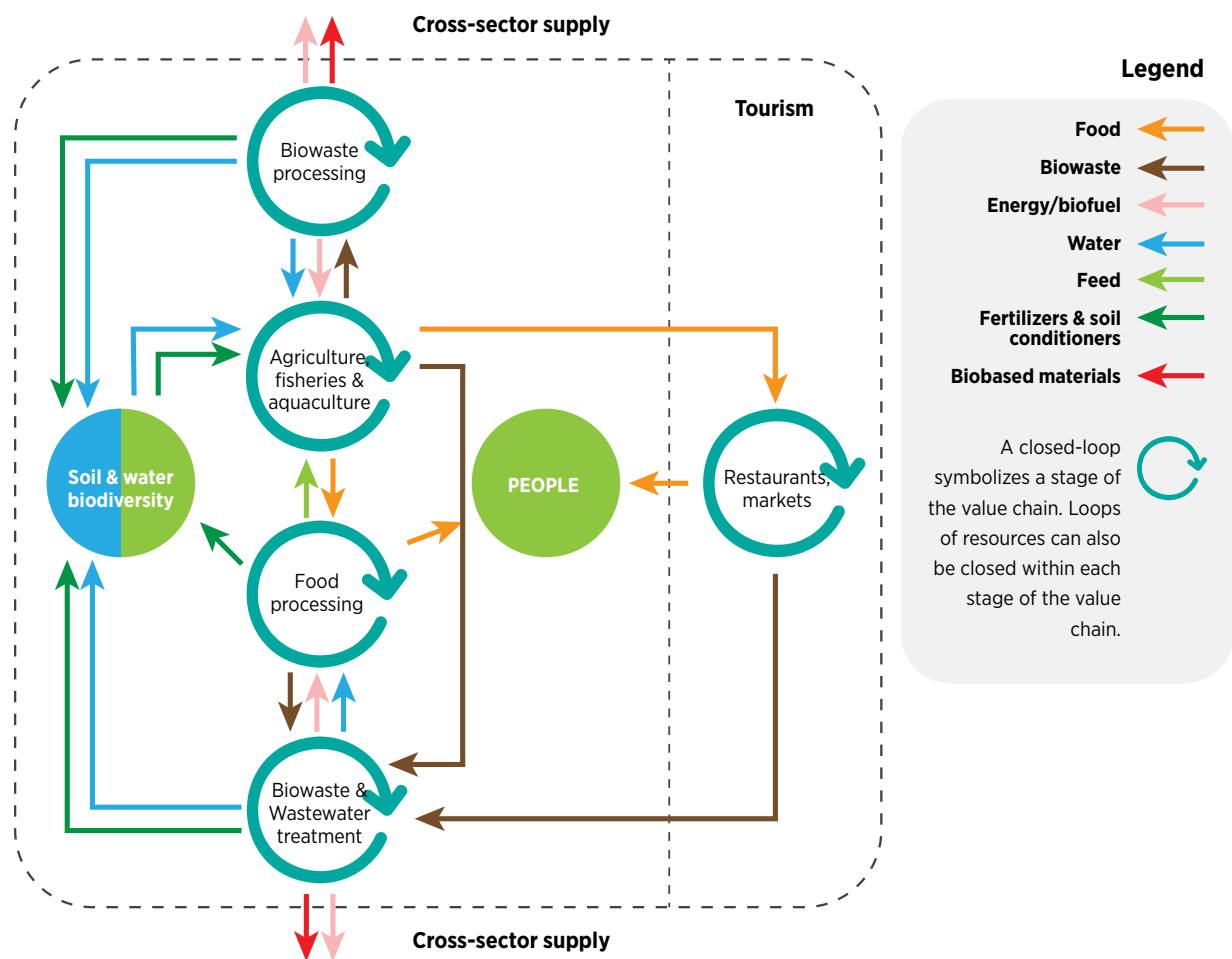


Figure 5 – The circular food system (simplified)

Source: Deloitte and Circular Change

**Food in a linear context** – Food is mainly produced by intensive agricultural and aquacultural practices and overfishing, which threaten ecosystems and deplete valuable resources such as soil and water. These intensive practices are sustained by the use of harmful chemicals (pesticides and antibiotics), and fossil-based and non-renewable fertilizers. Furthermore, the agrifood biowaste and food waste that are produced along the food value chains are disposed of, polluting the environment and disrupting the natural cycle of carbon and nutrients. Consequently, a linear food production is not only unsustainable, but it creates a loss of value, biodiversity and degrades a country's resources.

**Circular food systems are different** – The health of food systems depends mainly upon the status of water, soil resources and the climate.<sup>61</sup> A sustainable and circular food system can ensure the renewability of these resources. Instead of monocultures, overfishing and intensive practices, it looks

<sup>61</sup> Inter-American Institute for Cooperation on Agriculture. *Healthy soils: the bedrock of sustainable food systems in Latin America and the Caribbean: an input for discussions in the Americas leading up the UN Food Systems Summit 2021.*, FAO. *The State of the World's Land and Water Resources for Food and Agriculture – Systems at breaking point. Synthesis report 2021*, European Commission. *Food 2030 pathways for action: Research and innovation policy as a driver for sustainable, healthy and inclusive food systems*, EPRS – European Parliamentary Research Service. *Briefing EPRS Ideas Paper. Thinking about future EU policy: European Union food system.*



towards **regenerative systems**<sup>62</sup> that promote **biodiversity** and **organic** food production. Food is produced without toxic chemicals and additives and its packaging is circular or biodegradable.

**Food waste and other biowaste** can be valorized to produce renewable resources such as fertilizers, soil conditions and/or biofuels and bioenergy (Figure 6). This allows the closing of natural **loops** of important resources, such as water, carbon and nutrients that ensure a healthy soil and ecosystem. Food waste can be also minimized by households, restaurants and markets. Additionally, circular food systems support **local value chains** through the “farm to fork”<sup>63</sup> principle and place central importance on **local food** and **cultural heritage**.

The closure of the loops of resources is enhanced by **industrial symbiosis** and the collaboration across the value chain and between different value chains inside and outside the food system.



Figure 6 – Hot topics and trends of development of the food system

Source: Deloitte and Circular Change

62 Regenerative Agriculture aims at restoring the soil rather than degrading it, it is meant to improve the sustainability and resilience of ecosystems. Regenerative systems work with nature by supporting ecological processes and services such as nutrient cycling, nitrogen fixation, natural regulation of pests, soil and water conservation, biodiversity conservation, and carbon sequestration. For more details, please see: EIT Food. *Regenerative Agriculture: A Manual*. [https://www.eitfood.eu/media/documents/FR\\_edited\\_Intro\\_15\\_11.pdf](https://www.eitfood.eu/media/documents/FR_edited_Intro_15_11.pdf)

63 European Commission. *Farm to Fork Strategy*. [https://ec.europa.eu/food/system/files/2020-05/f2f\\_action-plan\\_2020\\_strategy-in-fo\\_en.pdf](https://ec.europa.eu/food/system/files/2020-05/f2f_action-plan_2020_strategy-in-fo_en.pdf)





## Opportunities

Through stakeholder engagement\* and a literature review, the development direction for the food system in Montenegro that the circular economy can bring about was defined, so as to develop sustainable agriculture and food value chains through the closure of circular **loops**, sustainable production and packaging, and increasing end-consumer **awareness**.

### Organic, local and healthy food production with eco-friendly practices

Montenegro's traditions, **cultural heritage and rich ecosystems** outline high potential for organic and high-quality food production by embracing circularity through eco-friendly and regenerative practices, and by strengthening **local value chains**. This can contribute to meeting the growing domestic and tourist demand for local and sustainable products. The products can then be branded based on their quality and sustainability (e.g. "Good from Montenegro" label, national product schemes, certified sustainability, IGP-related schemes and food safety).

The development of consortia and cooperatives through **collaboration** and strategic cooperation can play an important role in supporting small agrifood businesses in the implementation of such solutions.

### Valourization of biowaste streams for closing the loops and producing renewable fertilizers



#### Valourization processes and their products

- Direct reuse of biowaste as circular fertilizers or feed
- Composting to produce circular fertilizers and soil conditioners

**Food waste and biowaste streams** are currently a large underused and undervalued resource pool that can feed circular processes thanks to their rich organic content (see Figures 5 and 6). These resources could leverage the **self-production of circular fertilizers and feed** and the development of **regenerative** agriculture and aquaculture systems. The cycling of nutrients and carbon would support the **restoration of soil** health and reduce the dependency on fossil resources and imports, thus increasing the **resiliency** and **sustainability** of the food system.

### Valourization of biowaste streams for closing the loops and producing renewable energy and biobased materials



#### Valourization processes and their products

- Anaerobic digestion – Circular fertilizers and renewable biofuels/bioenergy
- Biorefineries – Renewable biofuels/energy, materials and chemicals

\* Please see Appendix 1 for a full overview of stakeholder engagement activities.



For their energy needs, food systems depend mainly on fossil resources, which in most cases are out of their control. Most stakeholders are thinking about **solar energy** (e.g. solar wineries and solar roofs). Solar represents an opportunity with great potential that can be integrated by other processes (e.g. biorefineries and anaerobic digestion) which valorize biowaste to produce renewable energy. The **self-production** of renewable energy could boost the sustainability, **self-sufficiency** and **revenue diversification** of the food system. However, they require high capital investment and substantial biowaste inputs, which can be an obstacle due to the small scales of businesses and biowaste flows. Thus, **collaboration** between stakeholders will be highly important.

### Alternative packaging schemes to reduce waste

The packaging system is currently characterized by using **single-use plastics** (SUPs) and high **waste packaging** quantities which are disposed of or are not properly managed. The circularity of food systems can be improved through the use of more **sustainable materials** and the implementation of **re-usable** and **returnable food packaging schemes** (e.g. refillable packaging schemes or deposit-return schemes). These solutions would reduce the amount of waste and could alleviate the waste burden created by the absence of a waste recycling infrastructure and at the same time reduce the import of materials needed for packaging. An aspect that is crucial to the implementation of these schemes is the current level of consumer **awareness and acceptance** of these solutions.

### From owning to sharing – sharing schemes for agrifood equipment and vehicles

Switching **from ownership to sharing** is a circular pathway and this can be applied to the food system. Sharing schemes can enable small producers and businesses to afford equipment, tractors and other machinery that otherwise would not be accessible to them. They can also help tackle the dependency on imports while reducing the amount of produced waste. **Cooperation** and **collaboration** are essential for the implementation of such schemes, especially given the degree of fragmentation of farms and the current level of transport connectivity and of the infrastructure.

These schemes can also enable the development of **new circular business models** that can create new channels of **data and information** useful for product optimization.

### Water management – from use to reuse and resiliency

Water is an essential resource for the value chains of the food system; however its sectors are **water-intensive**. This highlights the importance of transitioning from a linear use of water to sustainable water management practices, such as sustainable irrigation, management of **rainwater** and wastewater **treatment-to-reuse**. Water management includes the proper monitoring of water use and wastewater production.

The implementation of **water management** practices is an opportunity for greater **resiliency** and **self-sufficiency**, especially for small farmers. These practices could help **reduce costs** for small agrifood businesses and **lower the pressure on those ecosystems** that the food system depends on.

### Alternative farming practices

Inland food is currently mainly produced through mainstream agricultural practices in a territorially fragmented context. Traditional food systems can be complemented by alternative farming practices, such as urban farming. New businesses and collaboration platforms may arise from **urban farming**, which contributes to lowering land consumption, while increasing **local** and sustainable food production. This solution could also potentially enhance the **connectivity** between the rural and urban contexts, while increasing the resilience and sustainability of the food systems. Implementation of these practices will address the level of **awareness** from citizens and urban farmers.



### Valourization of degraded land and water bodies

Land that is degraded or abandoned is an unused resource that can be revitalized through **land restoration** processes. This land can become **productive** and contribute to increasing local food production while supporting the health of food systems. Spatial planning could play an important role in the development of degraded and abandoned land.


**Water ecosystems** can also be restored and generate a positive impact on fisheries and ecotourism. This is highly connected with sustainable water management.

## Forest systems – a circular forest system for Montenegro

### Why the forest system?

The forest system of Montenegro is composed of all the sectors and value chains that utilize forest biomass resources or biomass residues. These sectors include: forestry, wood processing and the manufacture of wooden goods, cellulose-based (e.g. paper) products, and other products from forest-based resources and their derivatives.

The forest system is important for Montenegro's economy and the country has had an important tradition of wood processing in the past. In 2020, forestry, agriculture and fisheries accounted for more than 8% of the country's GDP, while contributing less than 3% to the total nationally employed workforce.<sup>64</sup> Currently, they cover more than half of the total available land (currently larger than the EU average).<sup>65</sup>



<p><b>Country natural biodiversity</b>  <b>High natural biodiversity S/A 0.8271</b>  <b>Forests</b></p> <ul style="list-style-type: none"> <li>• 60% of total land</li> <li>• More than 714,000 ha</li> <li>• 83% state-owned</li> <li>• Coniferous and deciduous trees</li> </ul>	<p><b>Rural development</b></p> <ul style="list-style-type: none"> <li>• Almost 37% live in rural areas</li> </ul>
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Forests will play an important role in the **circular bioeconomy**, the development of **biobased materials**<sup>66</sup> (e.g. wood-based and fibre-based materials) and circular value chains that promote **decarbonization**. Transitioning to circular forest systems can promote **rural development**. Furthermore, forests provide ecosystem services that can create **cross-sector synergies** for economy and revenue diversification. Despite great potential (excellent wood quality, high surplus of biomass residue), forests are not always managed properly, illegal logging occurs and production is characterized by a low level of modernization and **low-added-value** products (e.g. roundwood and timber).<sup>67</sup> Montenegro has recognized the importance of forest systems in different national strategies.<sup>68</sup>

64 MONSTAT Montenegro Statistical Office. *Gross domestic product of Montenegro in 2020*, The World Bank. "Agriculture, forestry, and fishing, value added (% of GDP) - Montenegro." <https://data.worldbank.org/indicator/NV.AGR.TOTL.ZS?locations=ME>

65 Celebio. *Biobased Economy Business Opportunities in 6 CELEBio Neighbouring Countries*. [https://celebio.eu/wp-content/uploads/2021/04/CELEBio\\_D.2.2\\_Biobased-Economy-Business-Opportunities-in-AL-BiH-GR-MN-NMK-RS.pdf](https://celebio.eu/wp-content/uploads/2021/04/CELEBio_D.2.2_Biobased-Economy-Business-Opportunities-in-AL-BiH-GR-MN-NMK-RS.pdf)

66 Wood and its derivatives (paper and cardboard, processed wood, etc.) are part of the so-called "biobased" resources. Biobased resources and the productive processes that use them are part of the "bioeconomy". For more info, see: Ibid.

67 90% of primary and secondary production and only 10 % of the final production. For more info, see: Ibid.

68 Government of Montenegro, Ministry of Agriculture, Forestry and Water Management. *National Strategy for Agriculture and Rural Development 2015–2020.*, Government of Montenegro, Ministry of Agriculture, Forestry and Water Management. *National Strategy for Forests and Forestry Development Plan 2014–2023* and Government of Montenegro, Ministry of Sustainable Development and Tourism. *National Sustainable Development Strategy 2030 (NSSD)*.



## What does a circular forest system look like?

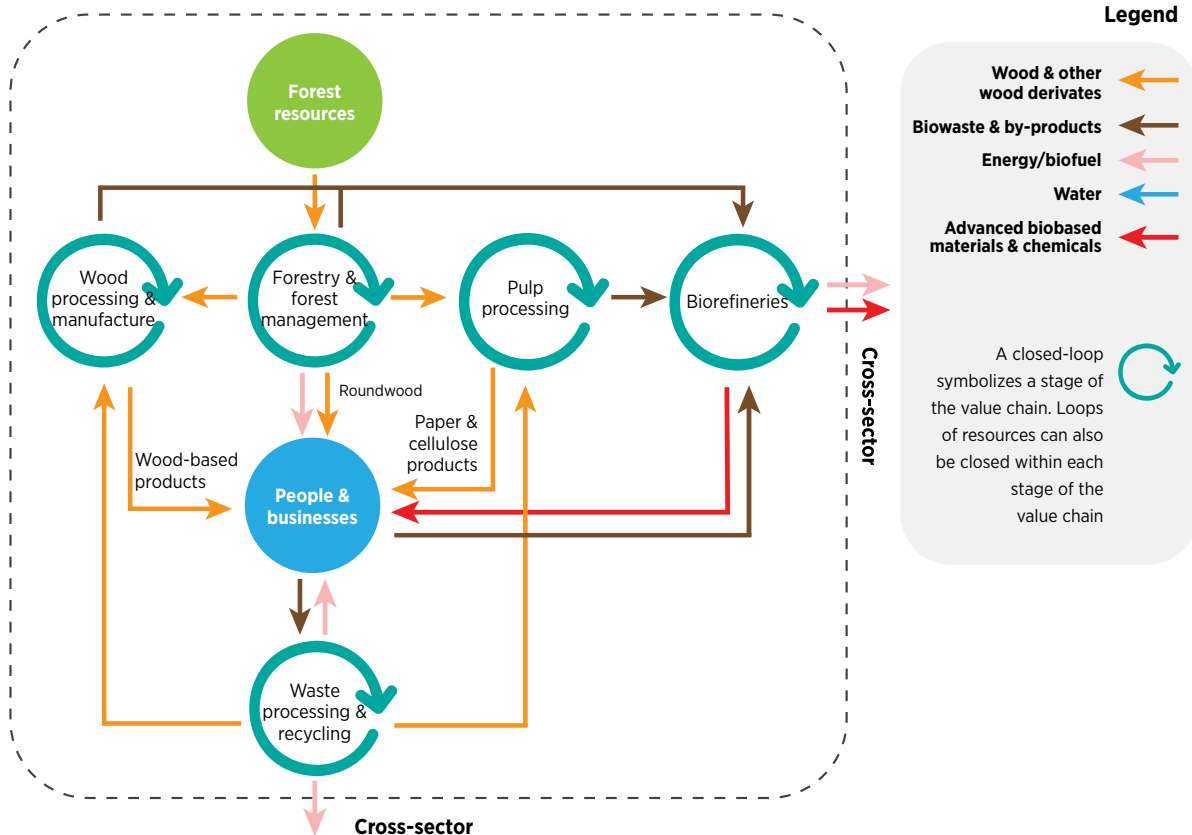


Figure 7 – The circular forest system (simplified)

Source: Deloitte and Circular Change

**Linear management of forest systems** – Traditionally, wood derivatives and paper are produced following intensive forestry practices that impoverish ecosystems, reduce their biodiversity and impact negatively on the renewability of forests. Along the wood and paper value chains, wood waste and by-products (e.g. sawdust, lignocellulose waste and other biomass residue) are disposed of and are not being valorized to their full potential. Consequently, a **forest system managed in a linear way** is not only unsustainable, but it also creates a loss of value and biodiversity, and degrades a country's resources.

**Circular forest systems are different** – A circular forest system is based upon **sustainable forest management** to ensure the sustainability, quality and resiliency of the value chains. **Local value chains** are supported and strengthened to produce several **wood-based** and other **biobased** products through the wood processing, pulp processing and biorefining processes. The system recognizes the importance of the **cascading approach of biomass** and **valorizes** secondary resources such as biomass residues and waste (e.g. biomass residues, wood processing waste, and wood and biobased packaging waste). These resources are employed as inputs to produce **renewable energy, recycled materials** and biobased chemicals and materials that can contribute to **closing the loops of biobased resources** (Figure 8).

The closure of the loops of resources is enhanced by **industrial symbiosis** and collaboration across the value chain and between different value chains inside and outside the forest system.

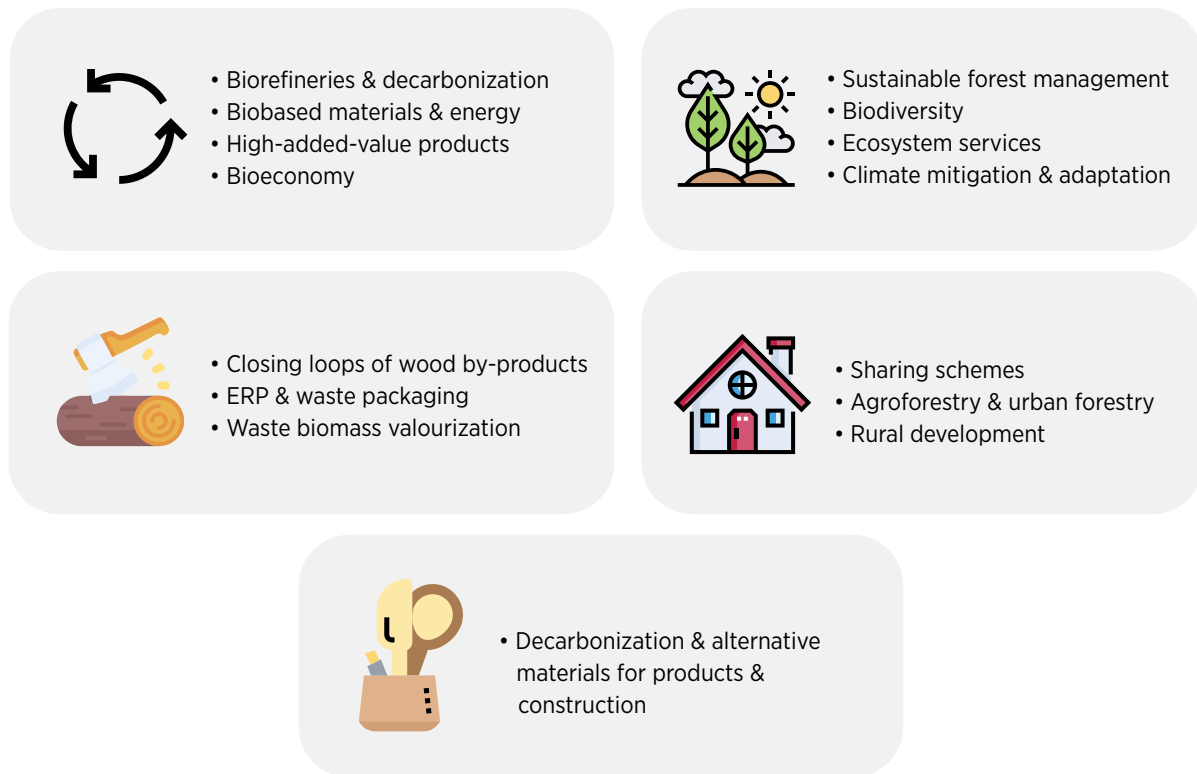


Figure 8 – Trends and hot topics of the forest systems

Source: Deloitte and Circular Change



### Opportunities

Through stakeholder engagement\* and a literature review, the development direction of the forest system in Montenegro that the circular economy can bring about was defined, so as to increase the productivity of raw materials, the added value of products and the sustainable and efficient management use of resources through forest management, circular design, the closure of loops and the valorization of biomass and its residues.

#### Sustainable forest management

Some forested areas in Montenegro are showing a state of degradation and are exhibiting low productivity. In this context, the development of a circular forest system can benefit from implementing sustainable forest management built upon strong monitoring and traceability. Transitioning to forest management practices, implementing adequate concessions and promoting **healthy forests** could reduce unaccounted logging and illegal deforestation which would otherwise hinder the resilience of value chains. It could also improve the current state of degradation and lack of attention to the health of forests. Successful implementation of sustainable forest management can increase and foster **forest coverage, forest stock** and **wood harvesting**. Such systems, with the support of value chain stakeholders, would allow the production of certified goods according to sustainable certification schemes (e.g. FSC and PEFC).

\* Please see Appendix 1 for a full overview of stakeholder engagement activities.



## Alternative circular biobased materials

### Alternative products

- Wood packaging
- Biobased packaging
- Biobased textiles
- Wooden substitutes for plastics & SUPs
- Renewable construction materials

The Montenegrin market is mainly characterized by fossil materials and linear products that do not meet the growing circular needs. The forest value chains can be sources for the production of several materials and circular products. This would mean switching from fossil sources to **renewable** and **biobased** ones, thus supporting Montenegro's **innovation** and its road to **decarbonization**. The full potential of these materials and products can be achieved by striving towards **high-added-value** manufacturing. Finally,

the manufacturing process would be based on **circular design** principles, such as design-to-reuse, biodegradability, recyclability, refurbishing and remanufacturing. This would support the development of circular value chains in the forest system.

### Alternative packaging through circular design

An important part of the circular transition would mean the use of biobased materials to produce packaging that is **biodegradable and/or** appropriate for circular **reuse-and-return schemes**. This shift would reduce the use of plastics and the amount of waste packaging, thus lowering the burden of the current waste management system and the need for imports of materials needed to produce the packaging.

### Valourization of biowaste, biomass residues and by-products

Along the value chains of the forest systems, there are valuable by-products and biomass residues (e.g. sawdust and other wood processing residues, waste wood and paper packaging and waste paper). These resources are currently not being properly managed and their value is lost. The use of these resources can allow the forest system to close its loops while producing additional **renewable energy, high-added-value products** and other **biobased** materials (e.g. polymers and chemicals). Exploiting this potential would mean developing **circular value chains** and **cascading biomass** flows that convert the loss of resources into added value for the Montenegrin economy (see Figures 7 and 8).

The implementation of some solutions (e.g. biorefineries and advanced biobased products), will depend on **collaboration** across the value chain and between different stakeholders due to the high capital investment required and the scale of biomass flows in Montenegro.

### Afforestation, reforestation and valourization of abandoned and degraded spaces

The presence of abandoned or degraded land is a lost opportunity which can be transformed through afforestation and reforestation initiatives. The development of such opportunities can be supported by sustainable spatial planning and urbanization. Learn more about this in the chapter on the [opportunities of the food systems](#).

## A COMMON OPPORTUNITY FOR FOOD AND FOREST SYSTEMS

### Ecotourism and ecosystem services – a rural development opportunity

Forest and food systems contribute to different aspects of our everyday lives – from culture and heritage, to recreation and wellness. Thus, their link with tourism is very strong. Sustainable tourism is becoming a strong trend after the pandemic, and tourists are becoming more sensitive towards na-



ture and natural resources. Sustainable tourism initiatives, such as agritourism and ecotourism, can support the competitiveness and revenue diversification of the food and forest systems, and improve rural development. The development of this opportunity can simultaneously increase the motivation to protect natural resources, forests and wildlife.

Developing solutions that refer to rural areas where the potential for tourism is still hidden or untapped, can further contribute to the international recognition of Montenegro as a green and healthy tourist destination. Learn more about these synergies in the chapter on the [tourism sector](#).

## Built environment

### Why the built environment?

The built environment is a human-made space that covers activities such as buildings, roads, parks and other infrastructure. It is the space in which people live and work. The modern built environment includes a healthy and sustainable approach to addressing people and community needs.<sup>69</sup> The built environment is one of the largest industrial sectors in economic terms and in terms of resource flows in Montenegro. According to MONSTAT data, in 2020 the construction sector contributed around 6% to both national GDP<sup>70</sup> and national employment. The central part of the built environment system is the building construction sector.<sup>71</sup> According to the Report on Implementation of the National Plan of Waste Management, in 2013 about 90,503 tonnes of building construction waste were produced annually.<sup>72</sup>

The authorities in Montenegro have recognized the potential for economic development through increased resource efficiency of the built environment system as one of the priorities through a number of national policies and strategies.<sup>73</sup>

69 MONSTAT Montenegro Statistical Office. Gross domestic product of Montenegro in 2020. [http://monstat.org/uploads/files/Nacionalni\\_racuni/BPD/2020/Annual\\_GDP\\_2020\\_eng.pdf](http://monstat.org/uploads/files/Nacionalni_racuni/BPD/2020/Annual_GDP_2020_eng.pdf)

70 Ibid.

71 This is recognized in the Government of Montenegro, Ministry of Ecology, Spatial Planning and Urbanism. *Construction Development Strategy in Montenegro until 2020*. <https://javnepolitike.me/wp-content/uploads/2020/07/Strategija-razvoja-gradevinarstva-u-Crnj-Gori-do-2020.-godine.pdf>

72 Government of Montenegro, Ministry of Sustainable Development and Tourism. *Waste Management Plan 2014-2020 of Montenegro*. p 28. <https://zerowastemontenegro.me/wp-content/uploads/2016/11/Montenegro-National-waste-master-plan-2014-2020-DRAFT.pdf>

73 These national policy papers are: *the Smart Specialization Strategy 2019-2024*, *the Industrial Policy of Montenegro until 2023*, *the Directions of Development of Montenegro 2018-2021*, and *the National Strategy for Sustainable Development until 2030*.



### What does a circular built environment look like?

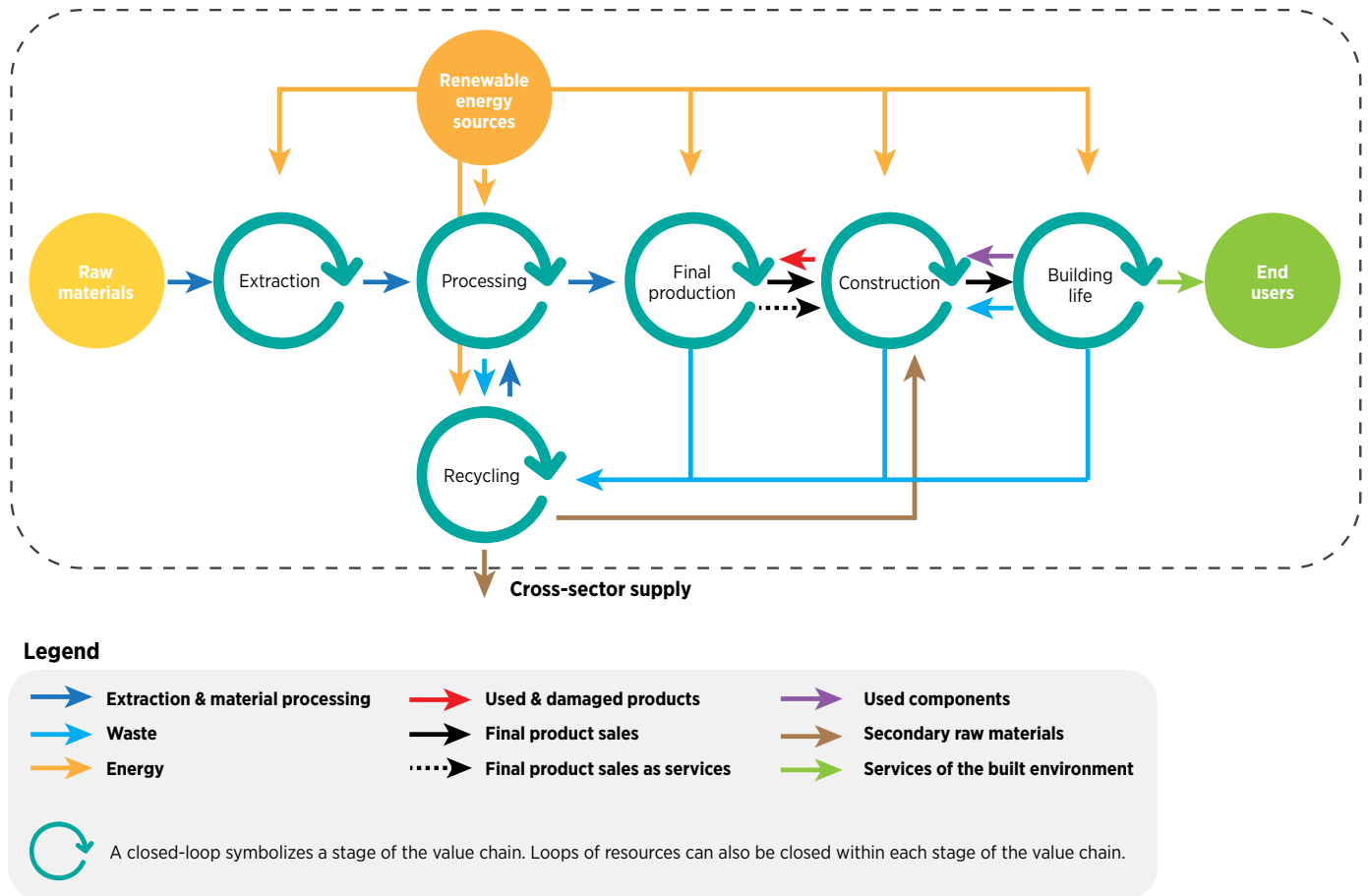


Figure 9 – The circular built environment (simplified)

Source: Deloitte and Circular Change

**A linear built environment** – The built environment has been developed with the use of fossil resources, intensive extraction of natural resources, and land consumption. Along the value chain of the built environment (Figure 9), operations, such as extraction, construction and demolition, are creating various valuable waste streams that are being disposed of or are not being properly managed. Waste disposal is costly, entails a loss of resources and pollutes the environment.

**A circular built environment is better** – A circular built environment has its basis in sustainable spatial planning (please see the [chapter on horizontal areas](#) to learn more about spatial planning) and circular design. The used components (modular components and traditional components, if applicable) and waste produced from construction, demolition and renovation projects are either reused or recycled, which creates circular value chains. Sustainable buildings and infrastructure are built based on eco-design principles, such as the use of modular construction, life-cycle assessment (LCA) of materials, and the use of circular (e.g. recycled) materials and/or renewable materials (e.g. biobased materials).

Space and land consumption are optimized. Rather than intensively constructing more buildings, old buildings are renovated and/or repurposed and leasing is favoured over ownership. Multipurpose building and infrastructure projects optimize space by including multiple functions and spaces. In this way, the life of buildings and materials is maintained over longer periods of time, reducing waste and GHG emissions.





Resources are managed efficiently across the value chains and buildings function through the use of resource efficiency principles, practices, and technologies.



Figure 10 – Trends and hot topics for the development of the built environment<sup>74</sup>



## Opportunities

Through stakeholder engagement\* and a literature review, the development direction for the built environment in Montenegro that the circular economy can bring about was defined in terms of sustainable construction with increased resource efficiency, utilization of construction waste and sustainable infrastructure which will facilitate the circular transition in other sectors. Specific opportunities that would make use of the drivers discussed in the [introduction to this chapter](#) are presented below.

### Circulation of construction material from construction waste and demolition/reconstruction waste

Valuable waste from construction and demolition (C&D) is currently being landfilled or not managed properly, while at the same time, there is a need for construction materials for infrastructure projects. The C&D waste could be recovered and used in new infrastructure projects, developing circular value chains in the built environment. The use of these secondary raw

**Building as Material Banks (BAMB)** is an EU-funded Horizon 2020 programme with 15 partners that aims to utilize these materials' actual value and enable a circular building industry.<sup>75</sup>

<sup>74</sup> General knowledge, Ellen MacArthur Foundation. "The Nature IMPERATIVE: How the circular economy tackles biodiversity loss." and Joensuu et al. "Circular economy practices in the built environment." <https://emf.thirdlight.com/link/yxmranfk-w1r7-o3wk36/@/preview/1?o>, <https://www.sciencedirect.com/science/article/abs/pii/S0959652620342608>

\* Please see Appendix 1 for a full overview of stakeholder engagement activities

<sup>75</sup> BAMB. "Enabling a Circular Building Industry." <https://www.bamb2020.eu/>



materials would develop the local supply of circular construction materials, developing a local material bank. This sector has high potential for creating a material bank in Montenegro, offering new possibilities for circular infrastructure and construction projects. Keeping these materials in the loop based on building construction standards will have a lot of benefits in the future, not only for the business but also for society. The main benefits are: a reduction of carbon emissions; prevention of new material extractions; better use of space; lower air pollution; production of less waste; a healthier environment; and satisfaction of the citizens.

### Introduction and use of sustainable and circular materials

Traditional materials and resources such as wood and stone are reusable and circular. Montenegro is rich in these resources and already manufactures these materials, although to a lower degree of processing. In cooperation with the manufacturing sector, there is an opportunity to create higher-value products that would be produced based on circular design and would meet construction standards. Designing a built environment

Relevant solutions range from bio-designed solutions to building façades that incorporate algae to generate energy, manipulating the structure of materials to build in new properties and using durable materials for product longevity.<sup>76</sup>

based on circular design principles and using circular materials can bring significant value to the sector. Modular and biobased materials are not only resource-efficient but also nutritious for the environment. Circular and sustainable materials can be introduced through voluntary and obligatory regulatory measures, following sustainable architecture trends and exchanges of good practices. Please see the [chapter on manufacturing](#) for more details on circular design and materials.

### The built environment as a pillar of the circular transition for other sectors and citizens

The built environment sector can be viewed as an enabler of circular transition for other sectors and society. While the built environment concerns businesses, citizens and governments, it has a large impact on the environment and standard of living. For the circular transition to become a reality for everyone, a sustainable and circular built environment is a precondition. As such, there is an opportunity for the construction sector to work closely with all stakeholders within the country, as well as with peers from abroad, to respond to the circular transition needs. In doing so, the sector will be able to address its obligations in transforming the built environment to a more circular and sustainable one.

### Brownfield instead of greenfield investments with incentives to make use of used or devastated areas

Montenegro has still an open issue related to the presence of brownfields – the remediation of degraded land from previous industrial activities. The remediation and repurposing of brownfields represents an opportunity for expanding productive industrial areas. The economic advantage of investing in brownfields is that those areas are provided already with certain physical capacities and infrastructure (e.g. road connectivity and electricity

The reconstruction of the former “Obod Cetinje” factory is an example of a brown-field investment. The old building was transformed to house the Faculty of Fine Arts, University of Montenegro, and student accommodation.<sup>77</sup>

76 ARUP. “Worldwide first façade system to cultivate micro-algae to generate heat and biomass as renewable energy sources.” and Iles. “The New European Bauhaus and the circular economy – An opportunity to demonstrate the potential of circular design.”<https://www.arup.com/projects/solar-leaf>, <https://ellenmacarthurfoundation.org/articles/the-new-european-bauhaus-and-the-circular-economy>

77 Prijestonica Cetinje. *Prostorno urbanistički plan Prijestonice Cetinje*. [http://www.cetinje.me/cetinje/cms/public/image/uploads/staro/doc/2015/Izdata\\_rjesenja/Prostorno\\_urbanisticki\\_plan/01\\_Prostorno\\_urbanisticki\\_plan\\_Priestonice\\_Cetinje/Tekstualni\\_dio/PUP\\_Cetinje\\_knjiga\\_2\(plan\\_2014\)\\_PLANSKI\\_DIO.pdf](http://www.cetinje.me/cetinje/cms/public/image/uploads/staro/doc/2015/Izdata_rjesenja/Prostorno_urbanisticki_plan/01_Prostorno_urbanisticki_plan_Priestonice_Cetinje/Tekstualni_dio/PUP_Cetinje_knjiga_2(plan_2014)_PLANSKI_DIO.pdf)



infrastructure). These initiatives can encourage actions for the sustainable recovery of existing facilities and land. This opportunity is related to the opportunities of the [food](#) and [forest](#) systems of valorizing abandoned areas.

### Multifunctional buildings and modernization for the built environment

Existing construction and buildings have more value than is usually attributed to them. Through stakeholder engagement, tax policy and subsidies, old and abandoned buildings can be revitalized. This could relieve the pressure of new construction needs in Montenegro. Renovation and repurpose projects can improve existing buildings by making them multifunctional, addressing more needs in the same space. One of the main benefits would be lowering land consumption and optimizing the already urbanized space. In this context, shared spaces and leasing have a potential for development too. Digital development can monitor building data, including its material content and, in that way, control virgin resources.

## Manufacturing sector

### Why the manufacturing sector?

The manufacturing\* sector in Montenegro is dominated by the manufacturing of basic metals, chemicals, other non-metallic mineral products, paper and print media. Other manufacturing subsectors are also present to a smaller extent, such as the production of textiles, leather and metal products, as well as basic pharmaceuticals. According to MONSTAT, these subsectors employed less than 3% of the national workforce<sup>78</sup> while World Bank data<sup>79</sup> indicates that the total manufacturing industry contributed around 4% to the country's GDP in 2020. The main manufacturing products are characterized by a low level of processing and value added, which negatively affects the global competitiveness of the local manufacturing sector. The sector is also highly dependent on imports and relies on less technology-intensive processing.

The Montenegrin authorities have recognized the potential to increase the competitiveness of the manufacturing sector through diversification, innovation, technology transfer and increased resource efficiency by prioritizing these areas in a number of national strategy documents.<sup>80</sup> Transforming Montenegro's manufacturing sector away from linear production by transitioning towards circular value systems could thus present a significant opportunity for achieving the set national goals.

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\* This focus area refers to all manufacturing subsectors excluding food and beverage production (NACE C.10 and C.11), the manufacture of wood, related products and furniture (NACE C.16 and C.31), which are separately covered in the food and forest systems, respectively.

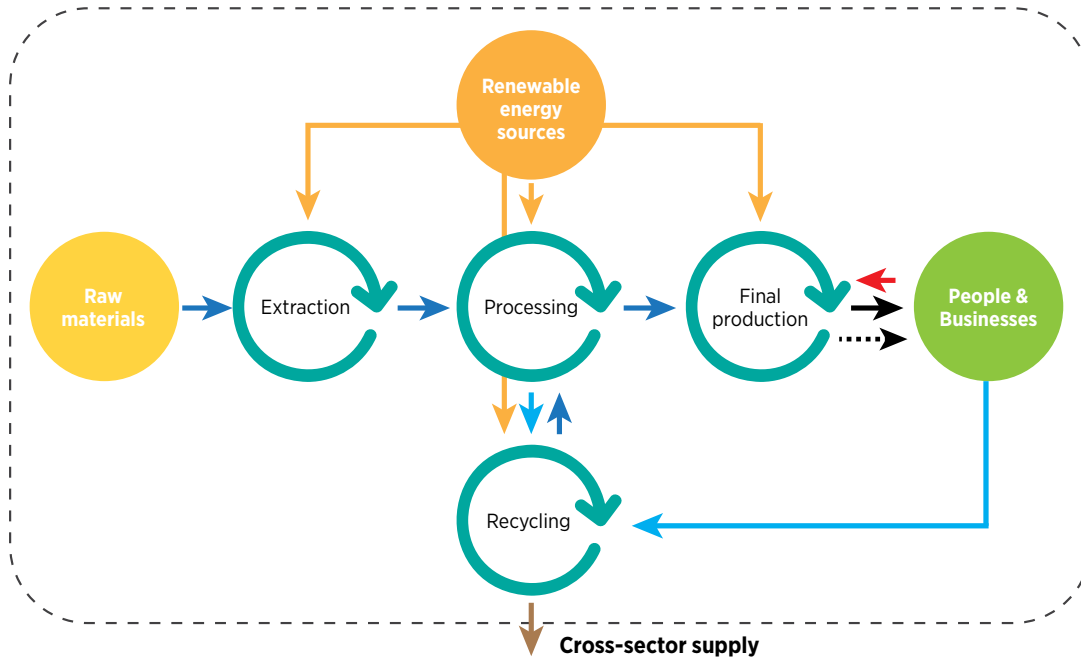
78 MONSTAT Montenegro Statistical Office. "EMPLOYEES BY ACTIVITY SECTORS Nace-Rev 2 (2010-2020)." <https://monstat.org/eng/page.php?id=1148&pageid=23>

79 Data on manufacturing subsectors is not available. The World Bank. "Manufacturing, value added (% of GDP) - Montenegro." <https://data.worldbank.org/indicator/NV.IND.MANF.ZS?locations=ME>

80 Government of Montenegro, Ministry of Finance. Montenegro Development Directions 2018-2021, Government of Montenegro, Ministry of Economic Development. Industrial Policy of Montenegro until 2023, Government of Montenegro, Ministry of Education, Science, Culture and Sports. Smart Specialization Strategy of Montenegro 2019-2024.



### What does a circular manufacturing system look like?



#### Legend

- Blue arrow: Extraction & material processing
- Red arrow: Used & damaged products
- Teal arrow: Waste
- Black arrow: Final product sales
- Orange arrow: Energy
- Dotted black arrow: Final product sales as services
- Teal circle with arrow: A closed-loop symbolizes a stage of the value chain. Loops of resources can also be closed within each stage of the value chain.

Figure 11: The circular manufacturing sector (simplified)

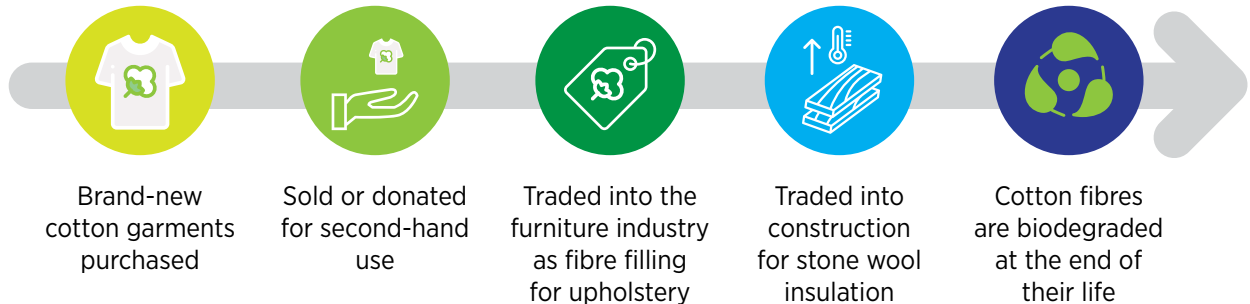
Source: Deloitte and Circular Change

The drawbacks of linear manufacturing systems have become most evident in recent times, especially in terms of exposure to the risks of increased resource prices and supply chain disruptions. Unlike a linear manufacturing model where companies extract resources and use materials to manufacture products which are sold to consumers and discarded after use, **a circular manufacturing model is designed to close the product and material loops to manufacture long-lasting products that are easy to repair, refurbish, remanufacture or recycle.**

The circular manufacturing focuses on waste minimization by designing products that are optimized for cycles of reuse in its final or component stage, are easily recyclable, repairable and/or remanufacturable. Circular manufacturers make such products by organizing their business models and systems to enable the differentiation between biodegradable components, that are free from harmful chemicals and safe to return to the biosphere, and durable components, which are unsafe to return to the biosphere and therefore intended for future reuse. They use renewable energy sources and optimize the use of energy, whenever possible, to promote system resilience and decrease resource dependency. Such manufacturers use systems thinking relating to their environment, social context and infrastructure, to further leverage the impacts their businesses and products can have. In this process, the digitalization of manufacturing plays a significant role, especially supporting these manufacturers' ambitions of product life extension and ensuring maintenance. They also do not exist in isolation and search for partnerships within and outside their industry to maximize value creation along their product value chains.



**An example<sup>81</sup> of the diversified reuse of materials across the value chain as a substitute for virgin materials:**



Circular value levers can be found by extending the life of materials and goods within each of the manufacturing loops - from extraction, material processing and final production. By designing products and choosing materials that would provide for easier and faster reuse and remanufacturing, manufacturers can find savings in terms of time, labour and capital, as well as reduce greater system externalities such as greenhouse gas emissions, water consumption and waste, and pollution. Innovation in the material, product and manufacturing processes further enables these benefits. Besides this, circular products that are intended for reuse create opportunities for consumers after they have served their purpose. Such benefits could include the organization of product return schemes either to the producer or to an intermediary for reuse through diversified application (within the same or different industry), or programmes for refurbishment or remanufacturing, in their totality or in parts. Whenever possible, the circular economy promotes replacing virgin materials with used or recycled ones.

According to estimates from the Ellen MacArthur Foundation for the EU,<sup>82</sup> the transition to circular manufacturing models could result in yearly net material cost reductions in the range of US\$340-630 billion.



Figure 12 – Trends and hot topics for the development of the manufacturing system

Source: Deloitte and Circular Change

81 Ellen MacArthur Foundation. "Towards the Circular Economy." <https://emf.thirdlight.com/link/x8ay372a3r11-k6775n/@/preview/1?o>

82 Ibid.



## Opportunities



Through stakeholder engagement\* and a literature review, the development direction for the manufacturing sector in Montenegro that the circular economy can bring about was defined so as to **increase competitiveness** through the **implementation of circular practices** in the production processes and **extended producer responsibility**. Specific opportunities that would make use of the drivers discussed in the [introduction](#) to this chapter are presented below.

### Recycling materials to manufacture circular products

Thus far, Montenegro has landfilled the majority of its waste, whilst highly depending on imports of raw materials and goods. With concerted effort from existing manufacturers, the wider ecosystem and potential new entrants, an opportunity exists to improve the conditions by sorting materials and recycling them back into manufacturing processes. This is especially the case with metals, glass and waste from electrical and electronic equipment (WEEE). Similarly to other Western Balkans countries,<sup>83</sup> an informal sector of solid waste collectors is prevalent in Montenegro. Organizing and integrating this network into manufacturing value chains could play a crucial role in transitioning manufacturing to a more circular model in Montenegro and reducing dependence on imports of virgin materials. The legislative framework plays an important role in defining what is waste and what is secondary raw material. Industrial symbiosis is based on the exchange of secondary raw materials and is to be encouraged and supported appropriately – by legislation, incentives, digital support and the like.

### Introducing remanufacturing and refurbishing processes to the manufacturing industry

Industrial users of equipment, tools and electronics usually replace them with new ones once they are worn out or stop working. However, these devices can often be recovered through remanufacturing or refurbishing with help of some technical know-how, the right tools and appropriate parts. Montenegro's manufacturing sector is characterized by small producers who could benefit from using methods of remanufacturing or refurbishing their equipment. The opportunity to use recovered equipment rather than buying it new would save costs, as this is less expensive, would minimize the overall waste creation in the country and would reduce the strain on the environment. By organizing a network with equipment resellers, repair shops and manufacturers in Montenegro and the region, the life of equipment would be extended and could be proven to be more affordable to producers while perhaps reducing financial barriers to entry in the manufacturing sector.

#### Benefits of using recovered equipment



\* This focus area refers to all manufacturing subsectors excluding food and beverage production (NACE C.10 and C.11), the manufacture of wood, related products and furniture (NACE C.16 and C.31), which are separately covered in the food and forest systems, respectively.

83 Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. *Inclusion of Informal Collectors into the Evolving Waste Management System in Serbia: A Roadmap for Integration.* <https://www.giz.de/de/downloads/inclusion-of-informal-collectors-into-the-evolving-waste-management.pdf>



### Choosing circular design and circular materials

Using circular design and choosing circular materials can provide product differentiation and increase the much-needed competitiveness of Montenegrin manufacturers on international markets. Circular design considerations include: the separation potential of used materials from any used chemicals, and the durability of materials with an expected product lifespan, as well as the recovery potential of the material after the intended use. Materials play a vital role in the circular economy. Producers primarily need to know the composition of the materials they use, in terms of biodegradable properties, their safety to humans and the environment, and to consider the origins of virgin materials or the potential to utilize already used materials, as well as to assess the future potential to reuse and cycle back later in the value chain without contamination. Circular design in itself would incorporate extended user responsibility that is expected to be required in Montenegro in the years to follow.

### Extending the life of used products through repair shops, reuse centres and similar initiatives

As part of the wider waste prevention schemes and extension of the life of durable products, a trend of repair and reuse networks has emerged in Europe. Within such schemes centres are often created as social enterprises, where consumers can bring for repair products that no longer serve them, instead of throwing them away in municipal waste. After repair, the centres then sell those items as second-hand products to other citizens, who can buy the products at affordable prices or in exchange for other items that they bring. By organizing such centres for bulky items, such as consumer electronics, furniture, or books, Montenegro could significantly reduce the waste at landfills, create green jobs and provide more affordable goods for its citizens. It is very important how second-hand and repaired or recycled products are introduced to the consumers – the design of shops and shopping experience must be on the same level as in “ordinary” shops in order to become a part of a trendy sustainable lifestyle.

### Waste oil recovery in collaboration with the transport system and other industries

In Montenegro, personal vehicle transport is preferred among citizens. According to Eurostat,<sup>84</sup> there were 350 passenger cars per 1,000 inhabitants in 2019, the highest in the Western Balkan region. Both the manufacturers and the transportation sector use lubricant oils to enable the functioning of engines and various mechanisms. The oil that is not lost during use or through leakage ultimately becomes waste oil. These waste oils are considered hazardous and can significantly contaminate waters and soil. By organizing and authorizing waste oil collectors, Montenegro has the opportunity to protect its environment and also explore oil recovery market opportunities that would ultimately reduce the oil consumption costs for consumers – from manufacturers, transportation system, car repair shops, shipyards and ports, to all that have an essential role to play in the recovery of waste oil.

84 Eurostat. “Enlargement countries – transport statistics.” [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Enlargement\\_countries\\_-\\_transport\\_statistics](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Enlargement_countries_-_transport_statistics)



## Tourist sector

### Why the tourist sector?

The tourist sector is one of the most economically significant sectors in Montenegro. According to the World Travel and Tourism Council (WTTC),<sup>85</sup> the total direct and indirect contributions of tourism and travel were around 31% of Montenegrin GDP and 32% of total employment in 2019.<sup>86</sup> In the same year, over 2.5 million<sup>87</sup> arrivals were recorded, and tourism accounted for over 52%<sup>88</sup> of total exports.

The sector's offer consists of coastal tourism in the south, urban tourism in the central region and mountain tourism in the north. Besides the 293 km<sup>89</sup> of Adriatic Coast, Montenegro has five national parks, six nature reserves, three marine protected areas, four UNESCO-protected sites and three Ramsar sites. The accommodation offering is concentrated in homestay types with 70%<sup>90</sup> of total capacities. The sector's demand is skewed towards coastal tourism over the summer months, as evidenced by 95%<sup>91</sup> of overnight stays being realized on the coast and 75%<sup>92</sup> of stays in the June–October period.

Recognizing the need for diversification while ensuring the long-term sustainability of this strategic sector and its impacts on the wider ecosystem, the Montenegrin authorities have placed the priority focus on development of sustainable, inclusive, green, safe and smart tourism through a number of national policies.<sup>93</sup> Tourism is also the industry that was the most set back by the pandemic crisis<sup>94</sup> and while still in recovery, there is a unique opportunity to simultaneously enable a green recovery, adjust the sector's practices to global trends and preserve natural resources. Similarly to other focus areas, the circular economy presents an opportunity for further development of the tourist sector and can serve as an integrator of national strategic directions with other sectors in the country.

85 World Travel and Tourism Council (WTTC). *MONTENEGRO 2021 Annual Research: Key Highlights*. <https://wttc.org/Research/Economic-Impact>

86 Ibid. These figures for 2020 were 8.8% and 27.3%, respectively.

87 The World Bank. "International tourism, receipts (% of total exports) - Montenegro." <https://data.worldbank.org/indicator/ST.INT.RCPT.XP.ZS?locations=ME>

88 Ibid.

89 Chamber of Economy of Montenegro. *MONTENEGRO Your Partner*. p 14. [https://www.privrednakomora.me/sites/pkcg.org/files/multimedia/gallery/files/2012/09/crna\\_gora\\_vas\\_partner\\_2021.pdf](https://www.privrednakomora.me/sites/pkcg.org/files/multimedia/gallery/files/2012/09/crna_gora_vas_partner_2021.pdf)

90 Government of Montenegro, Ministry of Economic Development. *Nacrt Strategije razvoja turizma Crne Gore do 2025. godine s Akcionim planom*. <https://www.gov.me/en/documents/b0b3d944-a7da-4a04-b648-3e2f5e2ce74e>

91 Ibid.

92 Ibid.

93 Ibid. Government of Montenegro, Ministry of Finance. *Montenegro Development Directions 2018-2021*; Government of Montenegro, Ministry of Economic Development. *Industrial Policy of Montenegro until 2023*; Government of Montenegro, Ministry of Education, Science, Culture and Sports. *Smart Specialization Strategy of Montenegro 2019-2024*; Government of Montenegro, Ministry of Economic Development.

94 According to the Government of Montenegro, Ministry of Economic Development. *Draft - Economic Recovery Platform 2022-2026* tourism revenues in Montenegro for 2020 dropped by 87% from those in 2019. <https://wapi.gov.me/download/80982bda-c225-4acf-99a9-04d845e832ef?version=1.0>





### What does circular tourism look like?

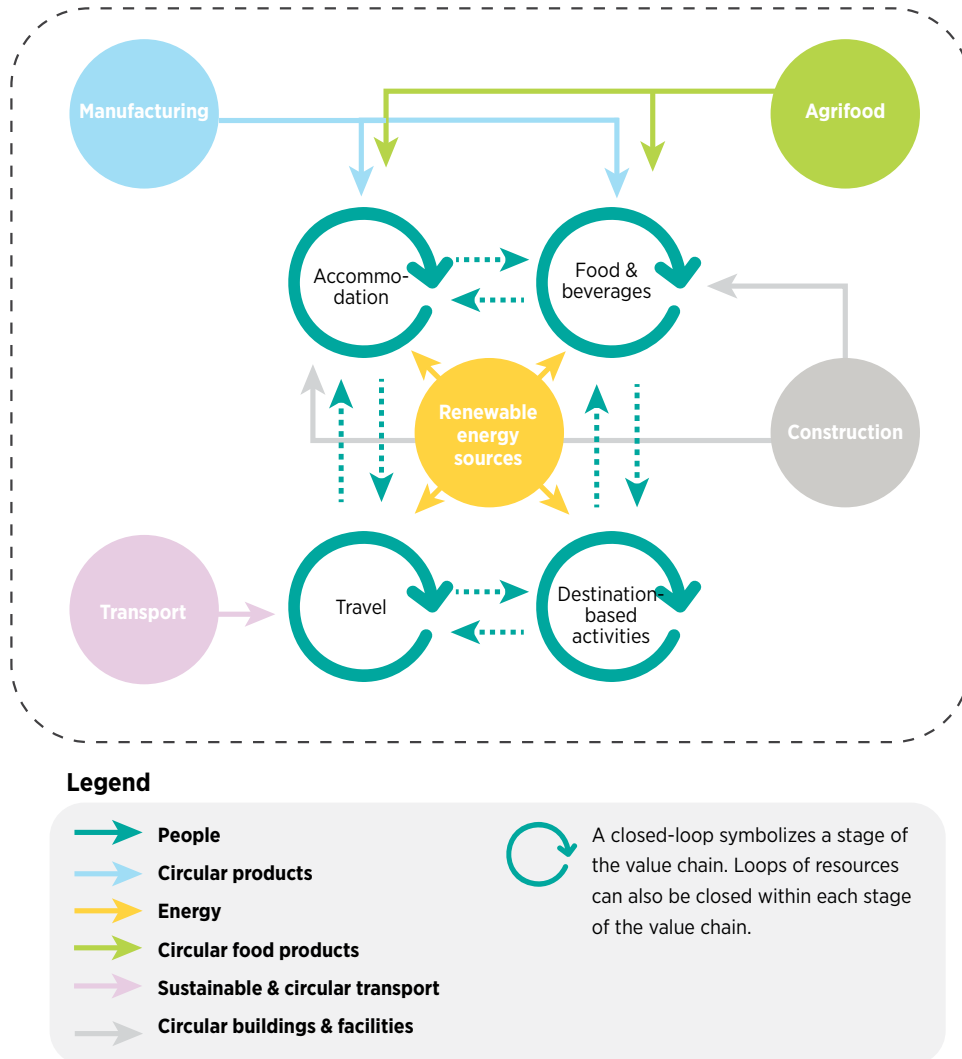


Figure 13: The circular tourism sector (simplified)

Source: Deloitte and Circular Change

The circular economy focuses on maintaining the value of resources and optimization of material flows across product value chains. The travel and tourism industry, although not a producer of goods, but a large consumer of assets, resources and products, also plays an important role in the circular transition, especially since linear tourist activities produce a host of negative environmental and social impacts. As a sector that is closely tied with other sectors, such as transport, construction and agriculture, a circular tourist sector acts as an enabler of transition by making circular consumption choices and supporting resource recovery. Within its operations, water consumption, handling of waste(water) and waste prevention are the main themes. Similar to other circular businesses, those in this sector use renewable energy sources to promote system resilience and decrease resource dependency. More than in any other industry, circular tourist businesses use collaboration and a systems-thinking factoring environment, the social context and infrastructure to further leverage the impacts of their businesses.



According to the Circular Economy in Travel and Tourism framework set out in the white paper by the CE360 Alliance,<sup>95</sup> circular transformation levers for travel and tourist operators can be found, depending on the business model, through circular procurement and circular-impact-driven and collaborative business propositions. By focusing on procurement and optimized use, asset-based tourist businesses such as accommodation and transportation providers, create circular value by sourcing circular materials and products (e.g. construction materials that are reusable/recyclable, second-hand or durable furniture, green vehicles, seasonal locally produced food, reusable textiles, and other consumables).<sup>\*</sup> Other travel-related services, such as travel agencies and tour operators, could create value by structuring travel packages that promote sustainability and circularity, thus focusing on the positive impact on humans and the environment through cooperation with local communities and other service operators.

While the tourist industry undoubtedly puts pressures on the living environment, the circular transition, on the systemic, cooperative and individual business levels, has the potential to reduce these pressures and create positive impacts not only on the environment, but on society as a whole.

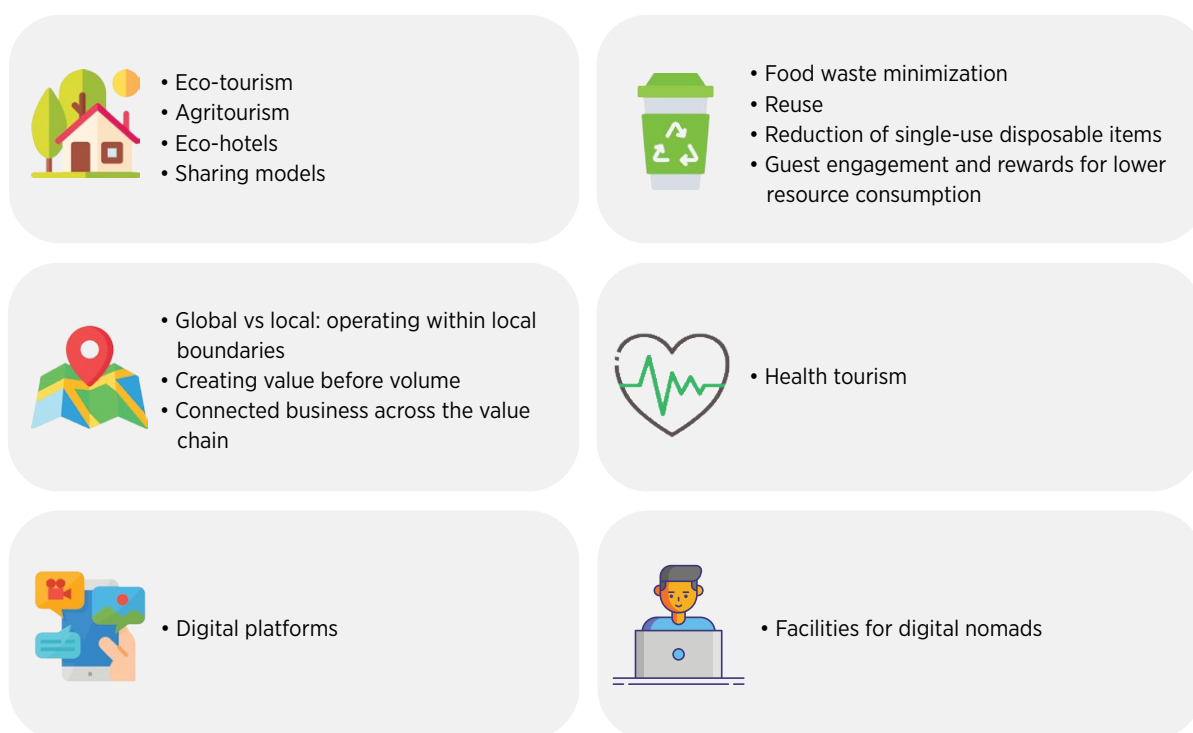



Figure 14: Trends and hot topics for the development of the tourist sector

Source: Deloitte and Circular Change

<sup>95</sup> Einarsson S. and Sorin, F. "Circular Economy in Travel and Tourism: A conceptual framework for a sustainable, resilient and future-proof industry transition", CE360 Alliance, 2020. <https://circulareconomy.europa.eu/platform/sites/default/files/circular-economy-in-travel-and-tourism.pdf>

<sup>\*</sup> Those that are non-toxic and designed for extended reuse through resale, maintenance, refurbishing, remanufacturing or recycling



## Opportunities

Through stakeholder engagement\* and a literature review, the development direction for the circular economy in the tourist sector in Montenegro was defined in terms of sustainable tourism with short supply chains, circular exchanges with other sectors and reduced negative impact on the environment. Specific opportunities that would make use of the drivers discussed in the [introduction](#) to this chapter are presented below.

### Agritourism, ecotourism and health tourism based on circular principles

The Montenegrin authorities have identified the highest potential in further tourist development in the areas of rural, natural and cultural heritage, and health services. Through cooperation with the nature conservation, agrifood, forest and health sectors, there is an opportunity for Montenegro's tourist sector to address the existing concentrations in the coastal region and seasonal demand. While these types of tourism share some circular economy themes and could contribute to more sustainable tourism, they are inherently not circular. However, there is an opportunity to align the approach. By tying the development initiatives of these subsectors to national climate change goals and focusing actions on not merely reducing resource consumption but rather implementing circularity and closing loops, the sustainability of the wider ecosystem and economic benefits for the people could create higher long-term value. Positioned correctly and implemented transparently to reduce the risk of greenwashing, these circular tourism subsectors could appeal to and successfully attract a whole new profile of visitor to Montenegro.

### Modernization of tourist facilities towards resource efficiency and use of circular materials

For circular tourist businesses with real estate, such as accommodation providers, spas, restaurants and the like, choosing circular design and construction materials for their premises is one of the essential components. Circular construction not only increases energy efficiency and reduces the carbon footprint, but also provides for better use of other resources and flexibility of premises (modular partitioning for multipurpose rooms, sharing and multi-purposing buildings, etc.). Some circular tools for building upgrades could include: upcycling of waste materials; use of secondary raw materials; designing for disassembly and waste prevention; designing facilities for flexibility and enabling components and products to be reused; and digitalization of buildings and systems for resource efficiency. With a large number of tourist facilities in Montenegro, there is an opportunity for operators to upgrade their facilities and realize long-term savings while ameliorating the negative impacts to people and the environment through cooperation with the construction sector and related suppliers. Please see the [chapter on the built environment](#) for more details on circular construction.

### Cooperation with suppliers that provide circular products

As a large consumer of products, the tourist sector is in a unique position to promulgate circular procurement. By incorporating circular material sourcing requirements into their procurement processes and introducing a preference for circular products, the sector has an opportunity to transition itself, as well as influence other businesses to transition, to a circular economy model. From eliminating single-use items, sourcing perishable circular supplies – such as food, toiletries, textiles, cleaning products, more durable second-hand or refurbished furniture, fixtures and appliances – the sector in Montenegro could reduce its negative environmental impact and make more sustainable choices through the direct cooperation and support of other circular businesses.

\* Please see Appendix 1 for the full overview of stakeholder engagement activities.



### Extending the life of used products and materials for reuse and refurbish schemes

Similarly to the role of tourism in the procurement of products and materials, tourist operators have a role to play in extending the life of circular products and materials. The businesses can make choices about whether to repair or refurbish broken products (e.g. appliances, furniture and light fixtures), supply discarded products to refurbishment and remanufacturing schemes (furniture, appliances and joinery) or materials (e.g. textiles, construction materials, wood and glass) as a secondary raw material for construction or for wood, textile or furniture manufacturers. Please see the [chapter on manufacturing](#) for more details on these schemes.

### Tourist sector and sustainable food value chain

Montenegro is a net food importer. Local food consumption is directly related to the level of tourist visits<sup>96</sup> and pressures on food supplies are especially pronounced during the tourist season. Besides being a large consumer of food, the tourist sector is also susceptible to creating large amounts of food waste. As such, the sector, which aims to contribute to circular economic practices, has a vested interest in stimulating local food production, as well as a responsibility to minimize food waste. Businesses that serve food, such as accommodation, catering and restaurants, who would like to ensure business sustainability, have the opportunity to cooperate with local food producers and promulgate short supply chains, and may opt to start their own food production and adjust their menus to serve seasonal produce. In terms of food waste prevention, the same businesses can: introduce food waste monitoring (e.g. measuring types, intervals and amounts) and optimize portion sizes; introduce social benefit schemes for prepared but not yet served food (e.g. donating to less privileged, selling to low-income groups at reduced prices, etc.) and opt to cascade the waste back into agricultural food production or production of bioenergy (please see the [chapter on food systems](#) for more information on valorization of biomass).

### Sustainable tourism certification schemes

Sustainable tourism certifications for tourist operators and destinations provide assessments and assist in a common understanding and measurements of sustainable practices. While these certifications do not have a specific focus on the circular economy, their implementation can still promulgate sustainability practices within the sector, which in turn can reap the benefits of pioneering these practices. Certification such as: Green Destinations, Blue Flag, Ecolabel, Travelife, and Greenkey, are some that are promoted in the Draft National Strategy for Tourism Development in Montenegro until 2025 with Action Plan.<sup>97</sup>

### Motivating sustainable tourist behaviour

Through branding and campaigns, the tourist sector can influence sustainable tourist behaviour or attract slow tourist\* groups. By coupling the promotion efforts of local experience with the introduction of travel pledges\* with a suitable ecosystem (offerings, communities, trained tourism staff, heritage preserving rules for visitors, etc.), Montenegro has an opportunity to enable sustainable tourism and address existing concentrations in the sector. Some of the promotion themes could include benefits of: off-season and longer vacations; the importance of local cultural and natural heritage to the local communities; appeal of local experience and cuisine, etc.

96 According to MONSTAT data, in 2020 Montenegrin net imports of crop and animal production, hunting and related service activities were €84,304,808, around 16% less than the year prior (non-pandemic year).  
Source: MONSTAT Montenegro Statistical Office. *Foreign Trade, CPA, 2009-2020*.

97 Government of Montenegro, Ministry of Economic Development. *Nacrt Strategije razvoja turizma Crne Gore do 2025. godine s Akcionim planom*. <https://www.gov.me/dokumenta/b0b3d944-a7da-4a04-b648-3e2f5e2ce74e>

\* Those that are interested in taking time to explore the local culture and history through reduced mobility while being mindful of the environment.

\* Initiatives that encourage visitors to commit to responsible behaviours when they travel to a destination, mandatory or otherwise.



## Recommendations for the way forward

A circular transition cannot be achieved singlehandedly by any one group of stakeholders. Instead, it calls for collaboration and involvement by all segments of society. That is why the drafting of this document was based on the active involvement of stakeholders representing public administration and international organizations, the business sector, research and education, and civil society. While the process of creation of the Roadmap and the resulting set of recommendations could be a starting point for strategic consideration of the next steps in Montenegro's transition process, the speed of transition will largely depend on how successfully stakeholders will jointly overcome the existing barriers.

The recommendations offered in this document are a summary of the following:

- Feedback received from the stakeholder engagement activities that took place from May to December 2021
- Literature review of national policies and strategy documents
- Relevant reports by notable institutions
- Relevant EU policies
- Roadmaps and models developed in comparable and leading European countries in the field

In order to provide a systematic overview of the possible next steps and encourage further stakeholder engagement, this document borrows the concept of the **Circular Triangle**.<sup>\*</sup> The triangle represents three intertwined elements enabling circular transition, namely: Circular Change (public policies), Circular Economy (business models) and Circular Culture (citizen values, narratives and behaviours). The recommendations are presented below in this document according to these three elements, and by no means represent an exhaustive list.

### CIRCULAR CHANGE

- **The National Circular Economy Strategy** should be the first step to follow the Roadmap, which will officiate the national transition path to the circular economy as a systematic approach through a government policy which would be followed by an accompanying detailed action plan.
- **Harmonization of key national strategic documents** and integration of the circular economy will be required as an integrative horizontal topic, connecting different ministries, strategies and plans, including spatial planning.
- **Harmonization of a legal framework** to include environmental and circular standards for businesses in all sectors in Montenegro, especially those that are less environmentally friendly. This would also provide for a binding and clear path for businesses to follow, knowing where to invest and at what speed.
- **Green public procurement** should be clearly introduced and implemented. Concrete cases should be promoted, and different stakeholders encouraged to participate in the development of green and circular measurements that are to be updated based on lessons learned to empower local partners. With the inclusion of circular criteria, the Montenegrin public sector would stimulate local demand for circular products and services.
- **A monitoring system** is encouraged to enable transparency and traceability of resource and material flows: based on the relevant EU and other international frameworks, the sys-

<sup>\*</sup> Developed by Circular Change in 2017.



tem is to be designed and implemented to prevent losses of valuable resources and optimize their use.

- **From waste management to resource management** – legislative support for prevention of waste, waste management and traceability is to be implemented to make the whole waste system more effective and maintain the value of valuable resources. Montenegro should prioritize strengthening infrastructure and capacity building in the sector.
- **Bridging the circular economy and bio-economy** by placing more focus on natural assets and management of biomass. From local food production (and consumption), management of forest systems, as well as the blue (marine) economy, through incentives and encouragement of collaboration between different stakeholders.
- **Circular investments and allocation of green funds.** A list of priorities to be prepared and partners encouraged to participate in consortiums to attract available financial resources for circular transformation.
- **Introducing financing for circular business models** through concrete regulatory measures and structuring of new financial instruments within the existing banking and finance system.
- **Establish sustainability and circularity principles, as well as environmental requirements,** for businesses (e.g. eco-design of products and processes), and both local firms and international suppliers. These would especially include the construction sector, electronic devices and packaging.
- **Promote brownfield investments** and their remediation, as well as the reuse of excavated soils.
- **Prevent greenwashing** in products, services and organizations by drawing up guidelines of environmental footprint methodology for sustainable products, and new business models and services.
- **Education and training** to be provided to all segments of stakeholders to empower engagement in circular transformation as well as to create new green and circular jobs. This also includes introducing the circular economy into academic curricula across the sciences, engineering, design and business, facilitating cross-border student and professional exchanges, as well as setting up accelerator labs that would enable innovation and development of circular solutions for the business sector.
- **A circular economy hub** establishment as a “one-stop shop” for different circular initiatives and solutions. A place where inter-ministerial dialogue is nourished and opened up for other stakeholders to get involved. The hub would also provide an opportunity to connect with hubs from other countries and enable exchange of good practices and know-how.
- **Circular economy activities** are to be implemented in the medium and long term to make an impact. Therefore, the circular transformation process goes beyond the mandate of one government and is understood as a joint commitment of different stakeholders to make it a reality.
- **Open data and reporting harmonization.** Data and information coming from waste management, water consumption and quality, and energy production should be more accessible to the public and follow a more harmonized approach in terms of structure. The structure and format of the data should be comparable with established international frameworks.



- **Monitoring the circular transition.** A methodology and set of indicators should be developed to continuously monitor and evaluate the effectiveness of the circular transition.
- **Circular transition strategies for specific sectors and municipalities** should be further developed to provide a coherent and tailored direction for circular transformation and enable further synchronized implementation among different stakeholders within individual sectors or regions/localities. Regions and individual sectors can be promoters, facilitators, enablers and implementers of circular transition.

## CIRCULAR ECONOMY

- **Introduction of circular economy business models.** Good practices should be promoted and different stakeholders addressed to recognize the role and positive impact of the circular transformation of their business models.
- **Digitalization** is to be used to support the use of existing data in a more effective way and strengthen the traceability of different flows – energy, water, waste, raw materials, etc. – and, by doing so, enable the optimization of value chains and value creation.
- **Focus on circular design.** Solutions are to be created in the design phase, wherever possible, rather than in the final one (treatment of waste). More emphasis should be placed on how to create products, what kind of materials to use, how to use local resources, etc.
- **Better management of natural resources** – particularly water management. Since drinking water is a scarce resource, water consumption should be monitored and optimized, and better monitoring of water quality assured.
- **Research and innovation.** More investments into research and development should be allocated and incentives created for encouragement of creative industries to engage in the circular transition. The cooperation between research and business should be instigated to foster circular innovations and implementation of solutions in the Montenegrin business sector.
- **Certificates for circular frontrunners** as an opportunity to highlight those that are implementing circular principles and their recognition is to be supported.
- **Circular tourism.** Knowledge sharing and exchange of good practices to make post-pandemic tourism more sustainable and circular, and campaigns for promoting circular solutions and attracting sustainability-sensitive tourists. Efforts to connect various activities, from agrifood, accommodation, manufacturing, transportation, forest systems, national and cultural heritage sites, to tourist boards in order to co-create comprehensive offerings that will be based on circular principles.
- **Capacity building and support for preparation of circular economy projects** to enable access to available and upcoming financing.
- **Intersector cooperation for achieving scale for circular practices.** The Montenegrin business sector is characterized by a large number of micro and small companies. This lack of individual leverage can be overcome through a systemic, cross-sector collaboration approach within and outside of the country's borders. One of the solutions is to create a regional or national circular transition digital platform where businesses can become educated on the use of secondary raw materials, obtain information on their availability and connect to exchange and transfer good practices in their sector.
- **Circular implementation strategies/policies** should be developed by individual business-



es, clearly tying the directions and investment to business plans and strategies. This would also assist businesses with obtaining investments and financing for circular transition.

## CIRCULAR CULTURE

- **Build public awareness** – Strong efforts should be made to increase the level of awareness and acceptance towards circular products and services. These efforts should include communication campaigns, public events and workshops, and stakeholder engagement activities. The awareness campaigns should also target public and private schools and universities.
- **Promote the role of cities and citizens** – education, motivation, engagement of citizens in the co-creation of circular solutions and changing of behaviour and habits in a more sustainable, circular lifestyle direction.
- **Promote closer cooperation between urban and rural areas for circular transition.** As both areas are dependent on each through flows of people, goods and services, closer cooperation could facilitate circular solutions that would address challenges related to climate change, food security and biodiversity decline, etc.
- **Dialogue with tourists** as important co-creators of circular solutions – promotion of circular tourism products and services, engagement of tourists in circular activities, adjustment of tourists' experiences towards more sustainable ones.
- **Encouraging a circular lifestyle** – making circular solutions affordable and accessible as well as visually attractive to motivate people to include them into their lifestyle.
- **Open communication** – usage of different communication channels to address a variety of stakeholders not only to follow the circular frontrunners, but also to co-create new circular ideas and share initiatives with a broader audience.

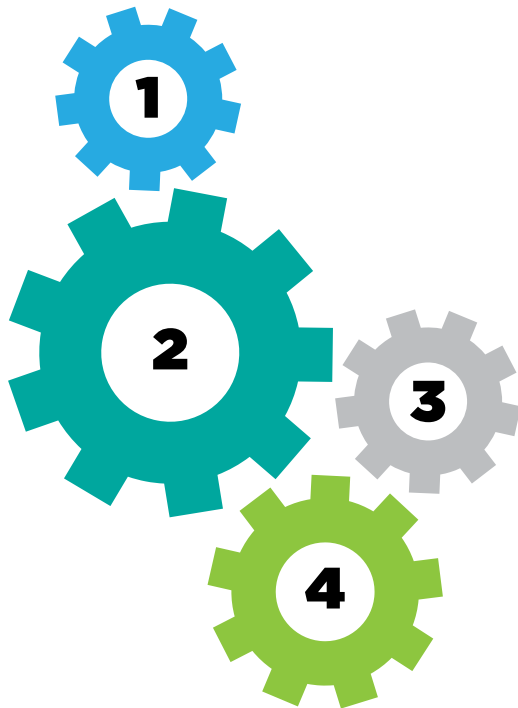






## Appendix 1

### Roadmap Development Approach



#### 1 Literature review

- Over 80 documents reviewed, including:
- National policies, strategies and laws in Montenegro
- Research results and reports by renowned institutions in Montenegro
- National strategies, roadmaps and strategic documents of other countries in Europe
- Review of national statistics

#### 2 Workshops with relevant stakeholders and attendance at various conferences and events

- Held workshops in June, September and December 2021 with relevant stakeholders from different sectors (public and private), 60+ participants
- The project was presented at more than 15 different events in Montenegro, including conferences and workshops organized by other actors active in the field of sustainable development and the circular economy.

#### 3 Private-sector questionnaire

- The questionnaire was distributed to the list of selected companies from targeted industries, and was completed by 84 companies.

#### 4 Stakeholder interviews

- Individual interviews and conversations were conducted with 15 + stakeholders from the economy operating within the focus areas, and several stakeholders from the public and academic sectors.



## Appendix 2

### Financial opportunities\*

Institution	Programme	Value	About the programme
Montenegro's State Utility EPCG and Eco Fund	SOLARI 3000+ and SOLARI 500+	€30 million	<p>The subject of the public call is the construction of integrated solar power plants, through financing and subsidizing users for the purchase and installation of photovoltaic systems up to 10 kW for individual residential buildings, or photovoltaic systems up to 30 kW for legal entities and - business owners. The goal of the project is to reduce monthly electricity expenditures through energy transition and installation of photovoltaic systems in households and businesses, enable their energy independence, reduce carbon dioxide emissions to a minimum and preserve the environment. The project beneficiary is given the opportunity to install an appropriate photovoltaic system, paying for it in monthly instalments equal to the amount spent on their average monthly electricity bill. Depending on the amount of the instalments and the power of the installed system, the repayment period of the investment is up to 10 years.</p> <p>Additional information is available at: <a href="https://www.eko-fond.me/me/javni-konkursi/javni-pozivi/">https://www.eko-fond.me/me/javni-konkursi/javni-pozivi/</a></p>
Eco Fund	On-grid and off-grid photovoltaic systems	€190,000	<p>The Eco Fund provides a subsidy for micro, small and medium-sized enterprises, entrepreneurs and all individuals who are registered with the competent authorities for self-employment and who on that basis generate income (hereinafter: users) for the purchase and installation of photovoltaic panels (hereinafter: photovoltaic system) for the production of electricity from RES:</p> <ul style="list-style-type: none"> <li>On-grid system: power no less than 3 kWp, on the roof of the main or auxiliary building, with accompanying equipment.</li> <li>Off-grid system: power no less than 600 Wp, battery reserves no less than 200 Ah, inverter power no less than 1,000 W and other accompanying equipment.</li> </ul> <p>The total amount for the distribution of funds for this public tender is €190,000.00, of which €150,000.00 is intended for on-grid systems, while €40,000.00 is intended for off-grid systems.</p> <p>Additional information is available at: <a href="https://www.eko-fond.me/me/javni-konkursi/javni-pozivi/">https://www.eko-fond.me/me/javni-konkursi/javni-pozivi/</a></p>
Investment and Development Fund	French Development Agency (AFD) - support for sustainable and inclusive development projects in Montenegro	€50.4 million	<p>AFD and IRFCG signed two financing agreements in Paris in 2021 (21 April) linking a €50 million credit line and a €400,000 grant as part of a programme aimed at supporting and promoting green and climate investment projects for small and medium-sized enterprises and Montenegrin municipalities. The programme also aims to contribute to the creation and development of projects with a strong social and economic impact in the most vulnerable regions of the country, promoting balanced territorial development, through special support mechanisms for entrepreneurs in these areas. Of the €50 million, €30 million must be directed to green projects.</p> <p>Additional information is available at: <a href="https://www.irfcg.me/me/component/content/article/14-sample-data-articles/632-klimatsko-finansiranje-i-post-covid-oporavak-afd-izdvaja-50-4-miliona-eura-za-podrsku-projektima-odrzivog-i-inkluzivnog-razvoja-u-crnoj-gori.html">https://www.irfcg.me/me/component/content/article/14-sample-data-articles/632-klimatsko-finansiranje-i-post-covid-oporavak-afd-izdvaja-50-4-miliona-eura-za-podrsku-projektima-odrzivog-i-inkluzivnog-razvoja-u-crnoj-gori.html</a></p>

\* Please note that this list of financial sources is non-exhaustive, serves solely for the illustrative purpose of representing currently selected set of projects and is subject to change in the future months. For details on how to apply, please visit each institution's website.



EBRD + Montenegrin Commercial Bank (CKB)	Energy efficiency projects in households	€2 million	<p>The European Bank for Reconstruction and Development (EBRD) has approved funds totalling €2 million to CKB for lending to energy efficiency measures in households. The funds were approved under the EBRD's Green Economy Financing Programme (GEFF) for the Western Balkans, worth €85 million. Since 15 February 2021, CKB has offered its clients a new line of special-purpose loans for investments and projects, which aim to improve energy efficiency in households with a return on investment of up to 20% of the value of the investment. The funds from this loan are intended for crediting energy efficiency measures such as: thermal insulation of buildings; replacement of windows and doors; procurement of pellet and biomass boilers; solar collectors; photovoltaic panels; heat pumps; economical lighting; and other measures that bring savings and comfort to end-users.</p> <p>Additional information is available at: <a href="https://www.ckb.me/gradjani/kredit/GEFF">https://www.ckb.me/gradjani/kredit/GEFF</a></p>
Investment and Development Fund - EIB	Project support - credit lines for the economy	€50 million	<p>The European Investment Bank (EIB) and the European Union Bank will, together, lend €50 million to the Investment and Development Fund of Montenegro (IDF). The purpose of this is to support faster economic recovery following the COVID-19 pandemic, whilst also helping to introduce energy efficiency practices into small businesses throughout the country. EIB has invested €100 million to support Montenegrin companies since the start of the COVID-19 pandemic. This programme offers a new source of more affordable funding for Montenegrin companies operating within the following sectors of the infrastructure: industry, transport, innovation, agriculture and tourism. These are, indeed, the sectors that were hardest hit by the pandemic. Funds will be available, under favourable terms, to help small and medium-sized enterprises (SMEs) address their liquidity issues, to support job creation, to increase competitiveness and to improve energy efficiency practices. The EIB loan is the most recent of a series of support measures presented by Team Europe to accelerate the recovery of regional economies from COVID-19 and to encourage an effective response to tackling climate change. It provides much-needed funding for issues concerning climate change and environmental sustainability in the Western Balkans and aims to enable a faster transition to achieving a sustainable, green and circular economy.</p> <p>Additional information is available at: <a href="https://www.irfcg.me/me/component/content/article/127-saopstenje-za-medije/667-eib-je-reafirmisala-svoju-podrsku-zelenom-oporavku-crne-gore-od-covid-19-kreditom-od-50-miliona-eura-potpisanim-sa-irf-om.html">https://www.irfcg.me/me/component/content/article/127-saopstenje-za-medije/667-eib-je-reafirmisala-svoju-podrsku-zelenom-oporavku-crne-gore-od-covid-19-kreditom-od-50-miliona-eura-potpisanim-sa-irf-om.html</a></p>



<p>European Bank for Reconstruction and Development (EBRD)</p>	<p>Circular Economy Regional Initiative in Turkey and the Western Balkans</p>	<p>€155 million</p>	<p>The programme will support investments in the private sector, particularly small and medium-sized enterprises (SMEs), to implement innovative and resource-efficient technologies and adopt circular business models in Albania, Bosnia and Herzegovina, Montenegro, North Macedonia, Serbia and Turkey. The new programme aims to improve chemical and waste management and the security of the supply of raw materials, as well as to increase competitiveness, promote innovation and boost economic growth. The Global Environmental Facility (GEF) is funding the programme with US\$13.76 million, which will be blended with EBRD finance of approximately US\$140 million. The programme will be complemented by technical cooperation funding of US\$ 1 million by the Austrian Federal Ministry of Finance.</p> <p>Project components:</p> <ul style="list-style-type: none"> <li>• Technical assistance to identify circular economy processes and technologies (resource audits), and to develop circular economy strategies and roadmaps for borrowers (post-signing).</li> <li>• Innovative financing to addresses barriers to investments in the circular economy by rewarding behaviour change with an interest rate reduction.             <ul style="list-style-type: none"> <li>• 50% interest reduction once implementation of circular capex is completed</li> <li>• 50% additional interest reduction once a circular business strategy is adopted</li> </ul> </li> </ul> <p>Additional information is available at: <a href="https://www.ebrd.com/news/2021/ebrd-launches-first-circulareconomy-programme.html">https://www.ebrd.com/news/2021/ebrd-launches-first-circulareconomy-programme.html</a></p>
<p>IDF and Eco Fund, with UNDP's technical support</p>	<p>Green Business Development Support Programme in Montenegro – solar photovoltaic panels for the economy and agriculture</p>	<p>N/A</p>	<p>The aim of the project is to create a favourable business climate and conditions for private-sector investment in low-carbon and other environmentally friendly ventures in Montenegro. The programme is offered to micro, small and medium-sized enterprises and agricultural producers in Montenegro and it supports investments in installation of solar photovoltaic systems with the exchange at the point of connection. The maximum amount available for the installations will range between €3,000 and €3,000,000 with the possibility of receiving a subsidy from the Eco Fund in the amount of €25,000, for an annual interest rate of 3%, which can be repaid within up to 10 years, including a grace period of up to a year. Beneficiaries will be selected on the basis of proposals received for PV systems with a capacity of: up to 10 kW, and over 10 kW.</p> <p>Additional information is available at: <a href="https://www.irfcg.me/me/2015-01-13-12-25-48/program-podrske-razvoju-zelenih-poslova-u-crnoj-gori-fo-tonaponski-paneli-za-privredu-i-poljoprivredu.html">https://www.irfcg.me/me/2015-01-13-12-25-48/program-podrske-razvoju-zelenih-poslova-u-crnoj-gori-fo-tonaponski-paneli-za-privredu-i-poljoprivredu.html</a></p>



The Government of Montenegro, Ministry of Economic Development	Economic Support Programme 2022	€5.2 million	<p>The Economic Support Programme 2022 will be implemented through a set of three programmes, as follows:</p> <ol style="list-style-type: none"> <li>1. Programme to improve the competitiveness of the economy 2022. It is envisaged that this programme will be implemented through a further eight sub-programmes, each with its own particular area of interest, and offering a combination of both financial and non-financial support: <ol style="list-style-type: none"> <li>a. Programme to procure high value equipment</li> <li>b. Programme to support small investments</li> <li>c. Programme to introduce international standards</li> <li>d. Programme to support digitalization</li> <li><b>e. Programme to boost a circular economy</b></li> <li>f. Programme to support internationalization</li> <li>g. Programme to establish and support mentoring services</li> <li>h. Programme to support for start-ups</li> </ol> </li> <li>2. Programme to develop the manufacturing industry 2022</li> <li>3. Programme to develop and promote crafts 2022</li> </ol> <p>The overall budget allocated for the implementation of the Economic Support Programme 2022 amounts to €5.2 million. Individual programmes, however, are responsible for setting their own specific terms and conditions, for deciding on which methods to use and on defining the scope of support they aim to provide.</p> <p>Additional information is available at: <a href="https://www.gov.me/clanak/novih-5-miliona-eura-podrske-privredi">https://www.gov.me/clanak/novih-5-miliona-eura-podrske-privredi</a></p>
Directorate for Energy Efficiency MKI + KfW	Energy Efficiency Programme in Public Buildings (EEPPB)	€45 million	<p>The overall goal of the programme is to contribute to protection of the global climate and to contribute to the sustainable development of Montenegro. Measures to improve energy efficiency, in terms of this project, include the installation of thermal insulation on the façade and roof of a building, intervention or construction of heating/cooling systems and domestic hot water systems, interventions on the lighting system, then works on preparing the building for the application of energy efficiency measures, as well as other components that affect the total energy consumption and conditions of comfort in the building.</p>
Ministry of Agriculture, Forestry and Water Management	MIDAS	N/A	<p>The Government of Montenegro and the Ministry of Agriculture and Rural Development, as the carriers of the project, have concluded a credit arrangement with the World Bank entitled “Montenegro Institutional Development and Agriculture Strengthening” (MIDAS project) which aims to prepare Montenegrin agriculture and the country’s institutions for future membership of the European Union.</p>
Ministry of Agriculture, Forestry and Water Management	IFAD calls and IPARD programme	N/A	<p>Supports both investments in increasing primary production (Option 1.1) and investments in processing, production, distribution and placement (Option 1.2). Interested farmers can procure cattle, seeds and planting material, special equipment, materials and machinery. In the part of processing, production, distribution and placement, it is possible to adapt/reconstruct/build facilities, procure and install special equipment for food processing, packaging, labelling and storage of finished products, cleaning, purification and other necessary activities in the facility in order to maintain hygiene; they can then procure specialized vehicles, and the procurement of second-hand means of transport is supported, but only from authorized dealers.</p>





<p>The Government of Montenegro, Ministry of Economic Development</p>	<p>Public call to co-finance innovation activities</p>	<p>€230,000</p>	<p>The call to co-finance innovation activities in 2022 envisages the co-financing of a set of five programmes. These are defined in the Innovation Programme 2021-2024; their purpose is to support research institutions and companies, researchers and innovators in a variety of ways. The purpose of the public call is to support the development of the innovation community by providing co-financing for the following programmes:</p> <p>Programme to support EUREKA projects:</p> <ul style="list-style-type: none"> <li>• Programme to boost the protection and development of inventions</li> <li>• Programme to boost the innovation of culture</li> <li>• Programme to implement educational programmes in S3 areas</li> <li>• Programme to support participation in the EU Framework</li> <li>• Programme for Research and Innovation, 'Horizon Europe' - Pillar III, Innovative Europe</li> </ul> <p>Additional information is available at: <a href="https://www.gov.me/clanak/javni-konkurs-za-sufinansiranje-inovacione-djelatnosti-u-2022-godini">https://www.gov.me/clanak/javni-konkurs-za-sufinansiranje-inovacione-djelatnosti-u-2022-godini</a></p>
<p>Innovation Fund</p>	<p>Public call for innovation vouchers</p>	<p>€100,000</p>	<p>The Innovation Fund of Montenegro has published a public call to award innovation vouchers. Innovation vouchers are intended for micro, small and medium-sized enterprises to enable them to develop new products, services and processes through cooperation with the scientific and research community; the aim of this initiative is to improve their competitiveness within the market. The goal of this call is to facilitate the provision of professional support, from scientific and research institutions, to a variety of companies. It is anticipated that such support would be offered as follows: the provision of contracted services for testing, exploration and validation, the development of new products or the improvement of existing ones and the use of technical knowledge to develop various innovative processes. One innovation voucher can be redeemed to cover up to a maximum of 80 percent of the total cost of services provided by a scientific research institution, or up to a maximum total of €8,000.</p> <p>Additional information is available at: <a href="https://fondzainovacije.me/fond-za-inovacije-crne-gore-otvara-javni-poziv-za-inovacione-vau-cere%ef%bf%bc/">https://fondzainovacije.me/fond-za-inovacije-crne-gore-otvara-javni-poziv-za-inovacione-vau-cere%ef%bf%bc/</a></p>



## Appendix 3

### Stakeholder mapping

 <p><b>Public administration, institutions and international organizations</b></p>	 <p><b>Business</b></p>	 <p><b>Research and education</b></p>	 <p><b>Civil society</b></p>
<ul style="list-style-type: none"> <li>• UNDP</li> <li>• Ministry of Economic Development</li> <li>• Ministry of Ecology, Spatial Planning and Urbanism</li> <li>• MONSTAT</li> <li>• Ministry of Finance and Social Welfare</li> <li>• Ministry of Agriculture, Forestry and Water Management</li> <li>• Ministry of Capital Investments</li> <li>• Ministry of Public Administration, Digital Society and Media</li> <li>• Ministry of Education, Science, Culture and Sport</li> <li>• Central Bank of Montenegro</li> <li>• Delegation of the European Union to Montenegro</li> <li>• GIZ</li> <li>• OSCE</li> <li>• EU Integration Office</li> <li>• EBRD</li> <li>• EIB</li> <li>• World Bank</li> <li>• Institute for Standardization of Montenegro</li> </ul>	<ul style="list-style-type: none"> <li>• Chamber of Economy of Montenegro</li> <li>• 13 Jul Plantaže A.D.</li> <li>• Eko korijen d.o.o.</li> <li>• Čistoća d.o.o Podgorica</li> <li>• Deponija d.o.o Podgorica</li> <li>• Doo Šimšić-Montmilk Danilovgrad</li> <li>• Etno selo Rakočević</li> <li>• LA-VISTA d.o.o Berane</li> <li>• Lighthouse of Montenegro d.o.o</li> <li>• Pivara Trebjesa</li> <li>• Voli Trade d.o.o.</li> <li>• Hiron Creative Lab d.o.o. Nikšić</li> <li>• Black Metallurgy Institute JSC Nikšić</li> <li>• Mondal Industrija d.o.o</li> <li>• Čelebić d.o.o. Podgorica</li> <li>• Porto Montenegro, Adriatic Marinas d.o.o.</li> <li>• Investment and Development Fund of Montenegro (IDF MN)</li> <li>• Eco Fund</li> <li>• Montenegrin Employers' Federation</li> <li>• Association of Montenegrin Managers</li> <li>• American Chamber of Commerce in Montenegro</li> <li>• Union of Young Entrepreneurs of Montenegro</li> <li>• Centre for Ecotoxicological Research</li> <li>• Innovation Fund Montenegro</li> <li>• Innovation and Entrepreneurship Centre Tehnopolis</li> <li>• Business Centre Bar</li> <li>• Eco Business Center Cetinje</li> <li>• Berane Regional Center</li> </ul>	<ul style="list-style-type: none"> <li>• University of Donja Gorica</li> <li>• University of Montenegro</li> <li>• University of Mediterranean</li> <li>• Science Technology Park Montenegro</li> </ul>	<ul style="list-style-type: none"> <li>• NGO Green Home</li> <li>• Coalition 27</li> <li>• NGO Ozon</li> <li>• NGO Zero Waste Montenegro</li> <li>• NGO Eco-Team</li> <li>• FORS Montenegro – Foundation for the Development of Northern Montenegro</li> <li>• Fond za aktivno gradanstvo</li> <li>• NGO Morakovo</li> <li>• NGO Sjeverna zemlja</li> <li>• NGO Zeleno srce</li> <li>• NGO PRONA – Science Promotion Foundation</li> </ul>

Please note that the stakeholders listed are identified based on consultations with UNDP and the Chamber of Economy. The stakeholders in bold lettering indicate those who were directly interviewed. The list does not include all the institutions that participated in the series of workshops held during the creation of the Roadmap. Moreover, the list is non-exhaustive as many other stakeholders that were not identified can find themselves fitting into one of the four groups.



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