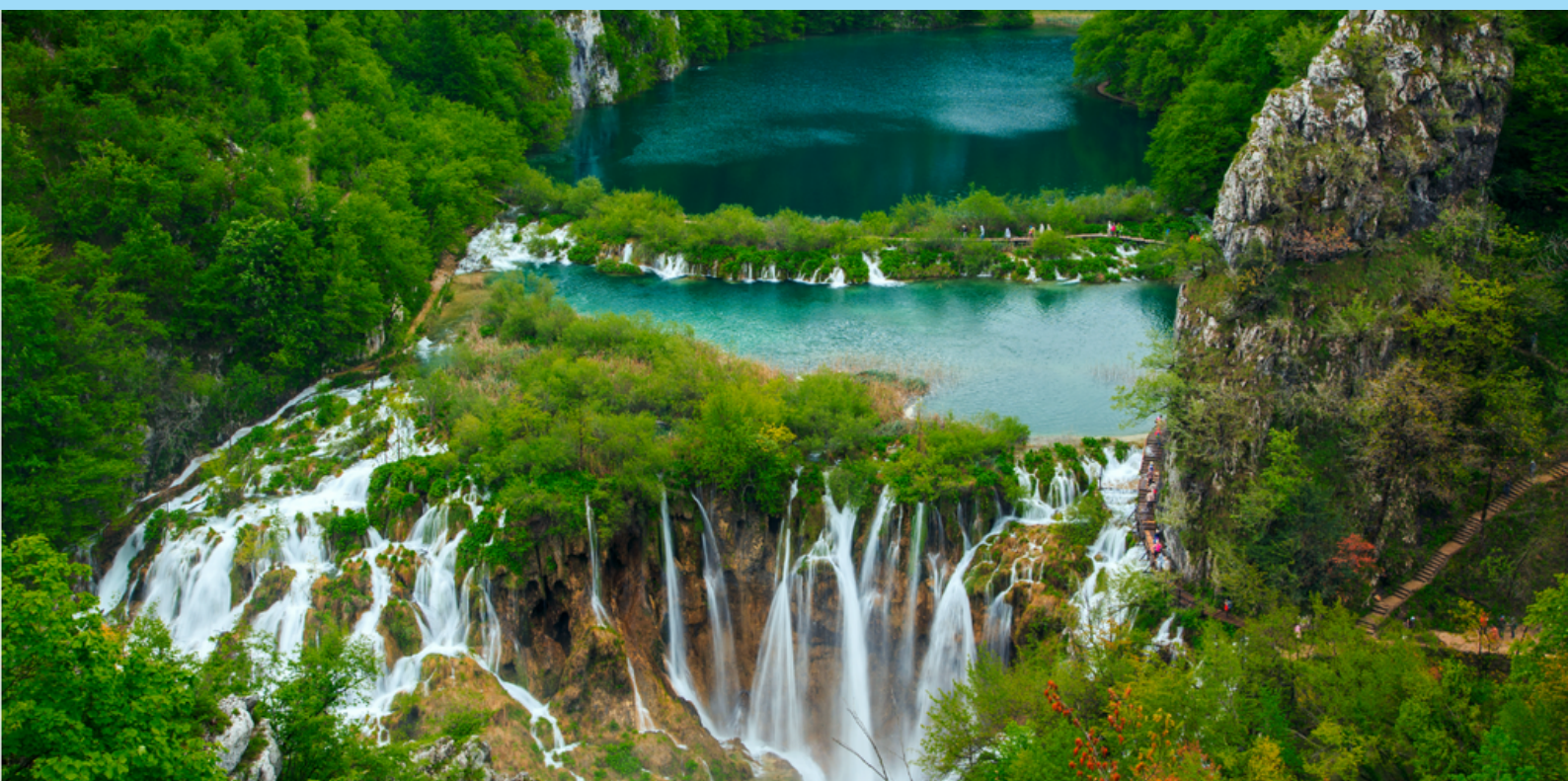




## EUROPEAN CIRCULAR ECONOMY STAKEHOLDER PLATFORM (ECESP) COORDINATION GROUP



# TOWARDS A BIODIVERSITY- INCLUSIVE AND CLIMATE- FRIENDLY CIRCULAR ECONOMY

A summary of essential results from reports on the biodiversity - circular economy nexus from members of the Leadership Group Biodiversity and Climate

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The circular economy is a key tool to advance towards our environmental targets, provided biodiversity and climate considerations are placed at the centre of its implementation.

In this sense, reducing the demand for primary resources should be the main focus, easing the key drivers of biodiversity loss, including habitat loss and overexploitation. Using circular economy actions to change the current food and biomass production system is also critical to change the current trend in biodiversity loss, with full respect of ecological boundaries. Furthermore, as Europe is a hotspot for pollution-induced losses of biodiversity, preventing waste and pollution at product design stage is very important, avoiding materials from ending up as waste in the first place.

Finally –and insisting in the key role of circular economy to achieve our environmental targets–, it is also important to note it is not a panacea: policies and measures specifically designed for biodiversity protection and restoration remain indispensable (e.g. the EU Biodiversity Strategy and nature conservation and restoration policies and actions).

# NEXUS BIODIVERSITY AND CIRCULAR ECONOMY

Biodiversity loss is not only an essential problem for our societies and human well-being[1] but also a key business risk[2]. Biodiversity creates economic value of over \$150 trillion in form of ecosystem services worldwide[3] and biodiversity loss already has major negative implications for the economy. Unsustainable consumption and production patterns have pushed the planetary boundaries to the extreme[4] and a transformation of these systems is paramount to halt and reverse biodiversity loss, as outlined by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services[5]. Here is where circular economy comes into play, as it shows the way to economic activities within the limits of ecosystems and how to use resources in a more sustainable manner[6]. These strategies make circular economy an essential tool to protect life on earth[7].

This means going beyond conservation and restoration efforts to also fundamentally transform the way Europe makes, uses, and reuses products and food. **It means redesigning Europe's economy to help achieve a nature-positive future**[8].

## BIOECONOMY AND BIODIVERSITY

Future economic activities should not place additional pressures on ecosystems[9]. The International Resource Panel estimates that more than 90 per cent of biodiversity loss related to land use and water stress come from resource extraction and processing. In particular, with the increasing drive towards a bioeconomy and use of renewable materials, **biodiversity issues need to be placed at the centre of the implementation of the circular economy as well as circular bioeconomy**. This will allow for a sound management of the resources available in nature, while taking into account the balance of ecosystems[10], and not contravene the protection of biodiversity[11].

## CIRCULAR ECONOMY AND CLIMATE NEUTRALITY

The circular economy also plays a definitive role in achieving climate neutrality[12]. About 50% of greenhouse gas emissions are related to materials. Implementing circular economy strategies can reduce these emissions by about 20-30%[13]. The positive impacts that the circular economy can have on biodiversity and climate change should not be taken for granted, but need to become a central part of designing and implementing circular economy actions[14]. **It is necessary to align circular economy strategies with biodiversity and climate protection strategies.**

# KEY RESULTS FROM RELEVANT REPORTS ON THE NEXUS BETWEEN BIODIVERSITY AND CIRCULAR ECONOMY

Several reports have been published in the recent years which explore the links between circular economy and biodiversity.

**The studies consider some important levers for a biodiversity-inclusive and climate-friendly circular economy:**

## 1. REDUCE THE DEMAND FOR PRIMARY RESOURCES

Circular economy strategies reduce the need for resource extraction, by maintaining the value of products, materials and other resources in the economy for as long as possible, enhancing their efficient use in production and consumption, and returning them to the product cycle at the end of their life e.g. through recycling[15].

Design is the relevant stage where resource efficiency can be determined and the use of secondary raw materials should be promoted. The initiative of EU to make sustainable products the norm and make the Ecodesign Directive applicable to a broad range of products has the potential to promote measures that help decrease resource need.

### LEVER FOR BIODIVERSITY

Reducing the demand for primary resources lowers pressure on biodiversity[16]. Reduced demand for primary resources decreases the demand for extraction activities and for converting natural habitats into cropland or monocrop plantations. As a result, key drivers of biodiversity loss, including habitat loss and overexploitation, can be tackled[17].

## SOME SUGGESTIONS FOR DECISION-MAKERS

- Recognise the circular economy as a delivery mechanism to address the underlying causes of biodiversity loss, and create enabling conditions for the circular economy at EU and national levels;
- Promote circular economy strategies that transform our production and consumption system, and enable funding for projects demonstrating the role of these strategies in reducing the extraction of new resources;
- Focus incentives on establishing circular design for products and processes and set up circular systems to enable material and products to circulate
- Consider appropriate metrics that better cover the link between circularity and biodiversity to align activities with the planetary boundaries as developed for example by the Science Based Targets Network 2020[18]
- Enhance policy coherence: firstly by leveraging a common understanding of a circular economy approach to build policy alignment [19],but more importantly circular economy policies can benefit from clearer references to environmental legislation as vice versa circular economy policy could be more closely integrated with policies governing key relevant sectors as Common Agricultural Policy, Farm to Fork Strategy or Renewable Energy Directive[20].

## 2. BIODIVERSITY-FRIENDLY SOURCING

Raw materials need to be sourced in a way that avoids harming natural systems. This entails adopting regenerative production practices, including activities that improve or restore degraded ecosystems in agriculture, aquaculture and forestry, for example, including nutrient retention, soil conservation, water purification and regulation, carbon sequestration and sustainable pest management[i]. Circular economy built around regenerative production principles can halt and even partly reverse biodiversity loss[22] [23].

In this context agriculture is crucial, as it is an indispensable human activity that needs to be tackled: about half of the world's habitable land is currently used for agriculture, and nearly two thirds of all species are threatened by agriculture and aquaculture practices[24], as shown in the reports. Hence, using circular economy actions to tackle the current food and biomass production system is critical to change the current trend in biodiversity loss[25]. In fact, Sitra found four sectors with the largest potential: food and agriculture, forests, buildings and constructions and fibres and textiles[26].

## LEVER FOR BIODIVERSITY

Biomass production is a key link between circular economy and biodiversity protection as the largest material flows in the global economy are biological resources[27]. As tropical forests, fish stocks and croplands are already under pressure through over-exploitation, a shift to even more renewable resources could potentially entail risks to biodiversity[28]. For example, a heavy increase in the production of biomass to substitute non-renewable materials with biological materials can lead to increased pressure on land through increased land use and land use change[29]. Furthermore, if the production of biomass is unsustainable or intensive, this could be detrimental to achieving the targets in the EU Biodiversity Strategy involving the reductions in pesticides and fertilizers[30]. Intensive monocultural biomass production is more likely to negatively impact ecosystems and soil[31].

## SOME SUGGESTIONS FOR DECISION-MAKERS

- Support the development of resource management systems that stimulate regenerative production approaches in agriculture and forestry [32];
- Ensure that resource production of renewable material is developed in a sustainable and circular way, with full respect of its ecological boundaries[33];
- Create incentives for circularity of bio-based materials rather than only substituting non-renewables with materials from renewable biological sources;
- Bring the values of sustainability and circularity at the core of the bioeconomy in the EU[34];
- Set priorities for the use of biomass: in accordance with the circular economy principles, biomass should in principle not be used directly for energy[35];
- Prioritise circular economy policies that have significant overlaps between climate and biodiversity benefits[36];
- Adopt a systemic approach to consider multiple factors across the entire life cycle of goods and services to integrate biodiversity and circular economy[37];
- Assess whether the use of bio-based raw materials instead of fossil based or non-renewables results in genuine environmental benefits[38];
- Promote nature-based carbon removals, as outlined in the EU Circular Economy Action Plan, including restoration of ecosystems, forest protection, afforestation, and sustainable forest management[39];
- Promote long term storage of carbon in wood construction and re-use of timber[40];
- Use green (circular) public procurement[41]

## **SOME SUGGESTED ACTIONS FOR BUSINESS, AGRICULTURE AND FORESTRY**

- Adopt regenerative and sustainable production practices;
- Make the best use of resources already circulating in a given system;
- Set up circular economy processes so that using biomass is not detrimental to ecosystem preservation objectives[42];
- Valorise bio-waste, turn residues and discarded material into valuable resources (e.g. turning food waste into feed for animals) [43];
- Develop and use circular eco-design, as this is a crucial "circular touchpoint" to ensure that the resources used come from a biodiversity-friendly supply chain[44];
- Assess biodiversity impacts and dependencies, and set biodiversity targets[45] [46];
- Identify circular economy opportunities that help meet biodiversity ambitions[47];
- Identify overlaps between biodiversity and climate impacts and corresponding action;
- Reduce the land-use footprint from biomass production, especially from food[48];
- Make use of the natural capital concept[49], assign monetary value to elements of nature to include benefits or losses into the company balance sheet;
- Due diligence for supply chains: carefully consider the materials and resources used and how they are sourced[50].

## **3. DESIGN OUT WASTE AND POLLUTION**

Preventing pollution focuses on preventing materials from ending up as waste in the first place. It also emphasises the need to reduce the use of hazardous substances or even phase them out, reducing emissions and other forms of leakage which both hampers reuse and recycling, and harms natural environments and human health[51].

Particular attention should be dedicated to reuse or recycling of waste into new resources in view of their potential toxicity. It is therefore important to ensure the traceability and safety of materials derived from waste[52] and to promote close and clean loops[53]. In the recent EEA briefing[54], eco-design has been identified as the crucial 'circular touchpoint' for enhancing the circularity of products while designing out waste and pollution.

## LEVER FOR BIODIVERSITY

Reduced pollution reduces impacts on biodiversity, such as air pollution, fertiliser run-off, leakage of toxic chemicals[55]. For example, reducing waste and littering reduces the amount of waste in the ocean, but also lowering greenhouse gas emissions from landfill or waste decomposition[56]. This is even more important as Europe is a hotspot for pollution-induced losses of biodiversity[57].

## SOME SUGGESTIONS FOR DECISION-MAKERS

- Enhance activities related to the Zero Pollution Action Plan, Chemicals Strategy and Safe and Sustainable by Design;
- Promote safe and sustainable chemistry developments and circular chemistry which uses waste as chemical feedstock and use novel chemical reactions to enable the recirculation of molecules;
- Develop design standards for a wide range of products, to provide guidance on how goods and by-products can circulate safely in the economy and how to reduce hazardous substances;
- Policies relating to products, buildings, chemicals, agriculture, land-use, and food all have a role to play in ensuring that what is placed on the market is designed with the circular economy in mind[58];
- Use environmental taxation to be applied to products and services that have a negative impact on the environment, notably through carbon pollution, waste or the consumption of scarce resources (polluter pays principle)[59].

## SOME SUGGESTED ACTIONS FOR BUSINESS, AGRICULTURE AND FORESTRY

- Use circular eco-design to design out waste and pollution from own products.



## 4. THE NEED FOR CONTINUED CONSERVATION, RESTORATION AND REGENERATION EFFORTS

Finally, it is important to note that while the circular economy is a great tool to advance towards our biodiversity, climate and other environmental targets, however it is not a panacea. Therefore, policies and measures specifically designed for biodiversity protection and restoration remain indispensable (e.g. the EU Biodiversity Strategy and nature conservation and restoration legislation[60]). Specifically, highly biodiverse environments and carbon stock regions, such as wetlands and forested areas should be better protected, rather than making them available for energy crop cultivation[61].

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