

The circular economy can help tackle the root causes of global challenges

The Ellen MacArthur Foundation works in the fields of education, business innovation and analysis with the aim of accelerating the transition to a circular economy. Founded in 2010 the charity addresses business, governments and academia to inspire a new way of thinking conducive to the development of an economy that is restorative and regenerative by design. In this interview, Jocelyn Blériot, Executive Lead at the Foundation, points out that a circular economy is strategic to remove the barriers to United Nation global goals since it can help tackle their root causes



Interview with **Jocelyn Blériot**, Executive Lead, Institutions, Governments and Cities – Ellen MacArthur Foundation

The latest IPCC reports did stress higher warning about Climate Change impact on our Planet. How can circular economy tackle climate change, also in the light of the latest Ellen MacArthur Foundation's report written in collaboration with Material Economics?

Switching to renewable energy and improving efficiency are vital measures to address climate change, but this alone is not enough, as this only tackles 55% of global greenhouse gas emissions. To achieve UN climate goals, we urgently need to consider the remaining 45% of emissions, which are generated by the production of the goods and products we use every day - everything from food to cars and buildings. A circular economy can help to achieve this by designing out waste, keeping materials in use, and regenerating natural systems. Analysis shows that applying circular economy strategies in five key areas (cement, steel, aluminium, plastics, and food)

can eliminate almost half of the emissions from these sectors by 2050, which amounts to a reduction of 9.3 billion tonnes of CO_{2e} - equivalent to eliminating current emissions from all forms of transport globally.

How can such goal be achieved?

By substantially increasing the use of assets such as buildings and vehicles, thereby cutting the emissions associated with their production. In the food system, a large positive effect is achieved by using regenerative agriculture practices, which serve to sequester carbon in the soil. Additionally, the circular economy has the potential to increase resilience to the physical effects of climate change. By developing remanufacturing practices and recycling that keep materials in use businesses can decouple economic activity from the consumption of raw materials vulnerable to climate risk while farmland managed regeneratively is more resilient to both floods and droughts.

How can circular economy contribute to actually curbing resources exploitation?

By keeping materials in use, the circular economy reduces the quantity of resources we extract from natural systems in the first place. Maximising the utilisation of products by designing them to be shared among users, be durable and long-lasting, and go through cycles of maintenance, reuse, remanufacturing, and recycling are key circular economy strategies to reduce the need for virgin raw materials. BlaBlaCar, a car sharing scheme that connects drivers with empty seats and people making the same journey, is for example a fast-growing company with 70 million users in 22 countries which substantially increases the use rate of vehicles.

Can circular economy be a driver of global sustainability, also and mainly at the societal level?

The circular economy presents an important delivery mechanism for global goals since it can help tackle the root causes of global challenges. In transforming how we make and use products, the circular economy provides a clear framework to achieve SDG 12 (responsible consumption and production). Due to its inherent material and energy intensity, heavy industry might be an obvious starting point, and opportunities in this area are large. But circularity can also be harnessed to re-invent the food system which, through regenerative food production and better cycling of nutrients, which would have positive impacts on biodiversity, soil health and freshwater. Overall, the circular economy holds promise to contribute to achieving wider SDGs, including SDGs 7 (affordable and clean energy), 11 (sustainable cities and communities), 13 (climate action), 14 (life below water), and 15 (life on land).

Which are the weaknesses and strengths of the indicators/criteria currently used to define an effective circular economy good practice?

As more companies and countries embark on the transition to a circular economy, it will be increasingly important to be able to assess and measure progress. At the moment, tools and criteria are far and few between, and mostly concentrate on recycling rates – which are part of circularity, but cannot serve as a reliable proxy. There are, however, efforts underway to address this

situation, and we for example have seen the European Commission's attempt to group relevant criteria¹. Meanwhile, building on the initial set of Circularity Indicators² released in 2015 is a current focus for us at the Ellen MacArthur Foundation.

Which are, to your knowledge, the latest developments on circular cities initiatives?

The circular economy concept is gaining popularity and is increasingly seen as a delivery mechanism for some of mayors' core priorities around economic opportunity, sustainable development, and quality of life. The Foundation has recently released a suite of resources³, to provide a reference point for urban policymakers.

We see things happening on the ground, and for example the city of Amsterdam has developed a proactive approach to the sharing economy as part of its circular economy activities, recognising that it opens up opportunities to make better use of materials and resources. In Texas, the City of Austin's ambition to reach zero waste by 2040 has generated several initiatives, including the creation of the Austin Materials Marketplace, an online materials exchange platform. Brussels' Central circular economy initiative is designed to harness the opportunities presented by the circular model, including reconciling economic and environmental objectives, supporting local production, optimising land use and integrating transport requirements. Toronto's Circular Economy Procurement Implementation Plan and Framework is positioned to become a major tool in creating economic growth, enhancing social prosperity, and moving towards zero waste in the city. These are some of the most prominent examples, but many more exist around the globe.

Which are the barriers to the transition from a country system to another, and which are the solutions you can envisage?

Integrating circular economy into national strategies requires a high level of awareness and political will, as we have so far seen at play first in EU in countries like Finland, France, the Netherlands or Denmark. While national governments gradually adopt circularity, we witness implementation being rolled out at higher speed by cities. Local authorities have many tools on offer that do not necessarily require new legislation. They include

fiscal policy levers that can be used to enable lead markets for circular economy products, and statutory regulations that can promote the reuse of resources and the reduction of waste. When planning for infrastructure renovations and replacements there are opportunities to consider designs that are low-carbon, energy efficient, modular, repairable durable and made from secondary materials.

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In your opinion, how can scientific research contribute to transition towards a circular economy model?

Scientific research is key to the transition to a circular economy. Take plastics for example: we must do more

than just clean up. Designers, entrepreneurs, academics and scientists are instrumental in rethinking the way we make, use and re-use plastics so they don’t become waste in the first place. To do this, we need better materials, clever product design, and new circular business models.

Scientific research is becoming more and more attracted by these ideas and we can see tangible progress, such as new materials emerging which now need to be commercialised at scale. For example, a team at the University of Pittsburgh has applied nano-engineering to create a recyclable material that can replace complex and unrecyclable multi-layered packaging. It mimics the way nature uses just a few molecular building blocks to create a huge variety of materials. Full Cycle Bioplastics, Elk Packaging, and Associated Labels and Packaging have made a high-performance compostable plastic from agricultural by-products and food waste to pack a range of products from granola bars and crisps to laundry detergent. Beyond materials research and new designs, new business models are emerging. One example is Algramo, a Chilean social enterprise which offers products in small quantities in reusable containers across a network of 1,200 local convenience stores. Avoiding single-use, non-recyclable packaging, the organisation focuses on places where recycling infrastructure is limited and small packaging items such as sachets often end up escaping into the environment.

¹ https://ec.europa.eu/environment/ecoap/indicators/circular-economy-indicators_en

² <https://www.ellenmacarthurfoundation.org/resources/apply/circularity-indicators>

³ <https://www.ellenmacarthurfoundation.org/our-work/activities/circular-economy-in-cities>

⁴ https://ec.europa.eu/environment/ecoap/indicators/circular-economy-indicators_en