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A positive way out

The SDGs explicitly address the challenges brought about by today's fast-growing and rapidly changing global economy. Moving from a linear to a circular model will contribute to achieving them

By **Ellen MacArthur**, Founder, The Ellen MacArthur Foundation

The level of ambition of the Sustainable Development Goals (SDGs) is humbling, to say the least. It entails a systemic, multi-stakeholder, all-encompassing shift: from the Industrial Revolution-inherited, linear, extractive model of take, make and waste, to one that shapes beneficial solutions.

To get there, incremental improvements or simple tweaks to the existing model will not suffice. The economy as we know it relies first and foremost on the transformation

of resources which are mostly finite. Better recycling or efficiency measures can only delay the inevitable – not prevent it.

Having lifted billions out of poverty and made material comfort a legitimate aspiration for all, the industrial engine is seeing obstacles on its horizon. The combination of resource scarcity and severe negative impacts makes it unreasonable to think we can carry on extracting, consuming and throwing away.

And while we might have come to realise that there actually is no 'away', we still have a lot of work to do to understand the interconnectedness of the system. Consider for instance that, according to the

International Resource Panel's latest report *Global Resources Outlook 2019*, 50 per cent of the world's greenhouse gas emissions are due to extractive activities – both industrial and agricultural. That's before we even start to take into account the use-phase of our products, buildings and infrastructure.

Focusing on achieving SDG 13 (climate action) requires looking beyond switching to renewable energy. A transformation in materials management is also crucial.

The way we make and use (or misuse) things lies at the heart of the issue, with cascading impacts that are both physical and societal. It's about responsible consumption

◀ Water flows out as a steel slab is cooled at a steel mill in Farrell, Pennsylvania, US. Due to its inherent material and energy intensity, heavy industry is a logical starting point for the transition to a circular economy

and production, the term that forms the basis of SDG 12. It is often mentioned that the circular economy can make a particularly credible contribution to that specific goal – by designing waste and pollution out, keeping valuable materials in use, and regenerating natural capital. And while we can wholeheartedly agree with this premise, we must also emphasise that circularity’s positive impact naturally reaches beyond SDG 12, by virtue of the aforementioned interconnectedness.

Without going through a tedious listing exercise, it’s not a stretch to see how designing waste and pollution out significantly helps life on land, life below water and urban environments (SDGs 14, 15 and 11, respectively). Using the same logic,

keeping materials in use will reshape industry and infrastructure (SDG 9). Regenerating ecosystems, meanwhile, is key to a string of goals, including but not limited to SDG 3 (health and wellbeing) and SDG 6 (clean water and sanitation).

Scaling up efforts

The economic benefits of the circular model are well documented, and one could potentially argue that there is ‘proof of concept’. What is required now is proper scale.

Looking at the built environment, mobility and food in the context of Europe, the Ellen MacArthur Foundation has demonstrated that the circular economy would also have significant beneficial impacts on the environment. Carbon dioxide emissions would drop 48 per cent by 2030 relative to 2012 levels. This is a compelling figure, which makes a strong case for an accelerated transition to a redefined notion of economic progress.

Heavy industry might be an obvious starting point due to its inherent material and energy intensity. But circularity can also be harnessed to re-invent the food system, to attain a regenerative model based on the optimisation of nutrient loops. This makes business sense, through the valorisation of agricultural by-products for high-value molecular extraction, energy production and dramatically reduced needs for expensive and soil-damaging chemical fertilisers.

We still need to ramp up efforts across a variety of fields such as materials science, education, design and infrastructure investment. But the early signs of a transition are firmly in place, on the back of strong private and public-sector involvement. The circular economy model took a prominent place at the recent UN Environment Assembly, and features heavily in the sustainable consumption and production resolution adopted by Member States in the closing plenary session – both clear acknowledgements of its transformative potential. ●

12 RESPONSIBLE CONSUMPTION AND PRODUCTION



Ensure sustainable consumption and production patterns

▶ Globally by 2018, **108 countries** had national policies on sustainable consumption and production



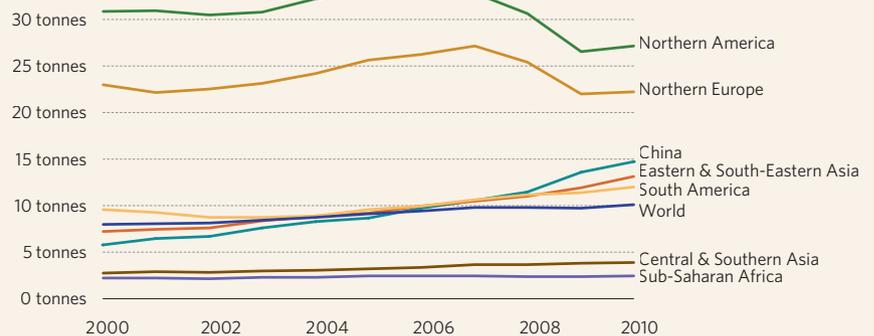
▶ **93 per cent** of the world’s 250 largest companies are now reporting on sustainability



Source: The Sustainable Development Goals Report 2018, UN

Material footprint per capita

Material footprint is a measure of the amount of raw materials extracted for use within a country, measuring the footprint for biomass, fossil fuels, metal and non-metal ores, in tonnes per person per year



Source: UN Statistics Division