The need for a new waste management model

Introduction

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1. THE NEED FOR A NEW WASTE MANAGEMENT MODEL
The amount of waste generated has risen ceaselessly since the dawn of the consumer society. This growth is expected to continue with the urbanization of developing countries. In 2018, the world produced two billion metric tons of municipal waste, a figure set to increase by a further 70% by 2050 if there is no change of model. Most of the waste is produced in East Asia and the Pacific, followed by South Asia, neck-and-neck with Europe and Central Asia. The environmental and social impacts are increasingly visible. There is a solution at hand: the circular economy, defined in opposition to the linear take-make-waste model. However, the world’s economy in 2020 had a level of circularity of just 8.6%. A number of initiatives exist, but many challenges remain ahead if we are to make the circular transition.

ORIGINS OF THE CIRCULAR ECONOMY

If we step back slightly from all the buzz that surrounds the circular economy, it is reasonable to ask ourselves, particularly the older members of our societies, just what is so innovative. Isn’t recycling and reusing material just plain common sense? Reflexes from an age when objects were manufactured essentially using human energy alone, imbuing them with a value that made the idea of mindlessly casting them aside unimaginable. The very concept of waste is a relatively recent one in our societies. What is the history of this waste which didn’t use to exist, appeared in modern times, and is now being asked to disappear again in favor of a circular modern world? Franck Aggeri, professor of management at Mines ParisTech, offers an historical perspective that leads us to the idea of urban mines, while Jacques Vernier, former president of ADEME (France’s environment and energy agency), writes about the Extended Producer Responsibility (EPR) principle that has underpinned European waste management strategies since the 1990s.

DIFFICULTIES IN THE CIRCULAR ECONOMY

In a circular economy, the challenge is to exploit and recover value from urban mines, i.e. urban waste deposits, under conditions that are economically, environmentally and socially acceptable. But with globalization and far more complex exchanges and technologies making today’s world so different from the past, the path back to circularity is strewn with obstacles. As well as value, waste also contains pollutants (heavy metals, refrigerant liquids, etc.) that generate costs for depollution and treatment before any materials or components can be recovered. This embedded value attracts unscrupulous actors that ignore all environmental standards to maximize their profits. Katie Olley, a waste shipment specialist for the Scottish Environment Protection Agency, gives us an illuminating overview of illegal waste trafficking around the world. But there are also difficulties encountered in official treatment and processing sectors. The increasing complexity of products, caused primarily by the ever-growing number of electronic components, makes them difficult and expensive to recycle. Thomas Graedel, professor emeritus of industrial ecology at Yale University, examines the reasons behind low rates of reuse and recycling and suggests ways they could be improved. Then there is the question of waste that has already been buried. Is it possible to recover and reuse this waste to produce secondary materials for reinjection into the economy, as well as to free up brownfield sites for rehabilitation? It certainly makes sense in terms of unimproved former landfills that slowly pollute the soil over the long term. The idea looks attractive on paper, but in practice there are numerous hurdles and limitations. Joakim Krook, professor of industrial ecology at Linkoping University in Sweden, describes the most recent work in this field.

OPPORTUNITIES IN THE CIRCULAR ECONOMY

At a time when countries with developed economies are starting to grasp the scale of the commitment to circular transition required after decades of ecological denial, emerging economies are facing two possible paths. They can either follow developed economies’ path of excessive growth, which will lead humanity to a point of no return. Or they can immediately start to invent another pathway to low-carbon growth that will deliver far more lasting benefits in terms of innovation, job creation and collaboration. The African Circular Economy Network (ACEN) understands what is at stake and is working to ensure that the circular economy is an opportunity for Africa to boost its resilience in the face of social and climate pressures, pressures that will impact it more heavily and more rapidly than anywhere else on the planet. Alexandre Lemille, co-founder of the ACEN network, offers us an optimistic assessment based on the numerous initiatives emerging across Africa that will build the foundations for the circular models every country in the world needs to move toward.

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