

# Trash to treasure: A vision of no waste in South-east Asia

A crucial pathway to achieving the circular economy in the region is collaboration across supply chains.

**Kris Hartley**

Erratic weather and extreme climate events gripped the world this summer, from wildfires in Canada to floods in Greece and Hong Kong. The human and economic loss, along with the increasing costs of recovery, has led to consternation among many, with unsustainable human behaviour largely blamed for the worsening situation.

Conferences and summits concerning sustainability are proliferating, with attention focused on the need for broad change in industrial production and the potential role of technology to achieve this.

But technology – while a crucial part of sustainability efforts – cannot by itself plug large and impending gaps in meeting the United Nations' Sustainable Development Goals (SDG) by 2030. Last Monday, UN Secretary-General Antonio Guterres disclosed that only 15 per cent of SDG targets are on track and that many are, in fact, going in reverse. Committing to ever more sophisticated technological solutions can address some problems, but the sustainability crisis is bigger than what technology alone can solve. A broader perspective is needed.

This broader perspective should include transformational thinking about the economy. Decades of industrialisation and economic growth generated employment opportunities for millions in low-income countries, while flooding wealthier countries with ever-cheaper consumer goods. Globalisation of supply and delivery chains and trends like fast fashion have exacerbated the situation over the past 10 years – a golden era for industrial production.

But it has been anything but a golden era for the natural environment. Unbridled manufacturing and consumption are degrading the environment in manifold ways, through resource extraction, energy consumption, production by-products, and end-of-life disposal.

## GROWTH OF THE CIRCULAR ECONOMY

Circular thinking can help foster a more holistic perspective on sustainability. Ideas about circularity have existed in various forms going back decades, but the concept itself has come into its own only in the past 10 years.

In a recent article analysing more than 200 definitions of the concept, Dr Julian Kirchherr, other colleagues and I defined the circular economy as “a regenerative economic system which necessitates a paradigm shift to replace the ‘end of life’ concept with reducing, alternatively reusing, recycling and recovering materials throughout the supply chain”.

Our definition also maintains that the aim of the circular economy is to promote value maintenance and sustainable development, creating environmental quality, economic development and social equity, to the benefit of current and future generations.

This broad definition highlights numerous pathways to implementation – including in South-east Asia, as much of the region continues to industrialise.

Consider the textile sector, which is responsible for a significant amount of waste across various production stages, including water used to farm cotton. On top of this, consumption preferences often result in material being discarded rather than reused – particularly

clothes.

Adopting circular thinking can help address such challenges by recognising how waste can be reduced not only through recycling and materials recovery but also through reuse, remanufacturing and refurbishing. The goal is to treat production processes like cycles that require fewer external inputs and generate fewer external by-products.

Circularity currently shows up in many ways, including through novel use of waste materials. For example, discarded polyethylene terephthalate (PET) bottles, more commonly recognised as the ubiquitous plastic water bottle, can be reprocessed to produce polyester fibre for use in clothing and other textiles – an imperfect but still useful substitute for virgin materials.

Japanese clothier Uniqlo has made polo shirts using polyester obtained from PET bottles. Swedish furniture retail giant Ikea likewise uses recycled materials in polyester products, having reached a threshold of 90 per cent usage in 2020. The company also pursues circularity through product design, maximising the interchangeability of parts to facilitate repair and remanufacturing for novel reuse.

Circularity is achievable in other ways. American computer manufacturer HP uses recovered ocean plastics as material in new computers, and Dutch phone manufacturer Fairphone sources materials from fair-trade certified and “conflict-free” mines focused on sustainable extraction and humane conditions for workers.

## CIRCULARITY PROSPECTS IN SOUTH-EAST ASIA

Individual efforts are important, but a collective approach to circularity is also needed. A crucial pathway to achieving this in Asean is collaboration across supply chains.

The feasibility of such collaboration depends on partner-to-partner interoperability, including roughly



Around the world and within Asean, waste disposal rates are rising while materials and resource recovery lags targets. PHOTO: AFP

equivalent technical capabilities such as digitisation and information sharing. Closing the gaps in technology access and infrastructure among Asean countries can also help ensure more seamless interactions among supply chain collaborators.

Broadly, there are four challenges to overcome to achieve circularity in production, according to research conducted by me and European Union-based researchers.

Cultural barriers include low awareness and interest among customers and producers, hesitant company culture, myopic business models and the dominance of linear thinking including the entrenchment of the “take-make-dispose” model of production. Such factors are particularly salient in newly industrialising countries, where fast-growing domestic firms or foreign investors primarily chase quick financial wins under lax regulatory regimes.

Market barriers include the low cost of raw or newly extracted materials relative to reused materials, an issue that has universal dimensions given the globalisation of factor markets.

Technical barriers include lack of technology to incorporate reused or refurbished components into production systems and absence of product design traits like modularity that enable such reuse and refurbishment.

Finally, regulatory barriers include policies that inadvertently obstruct circular activities, such as restrictions on the use of scrap material for novel purposes and the failure of policy interventions to treat waste management as an integrated, multi-stage process with inter-firm and cross-sector collaboration.

## BETTER POLICY CAN LEAD THE WAY

The time for action is now. A 2023 study indicates that global production is less than 10 per cent circular. Around the world and within Asean, waste disposal rates are rising while materials and resource recovery lags targets.

The notion of the circular economy is realisable now and in small ways, as illustrated by examples of companies incorporating reused materials. A systemic perspective is also needed to push the concept to its ultimate full potential, and Asean can be a leader in this regard following the adoption of its circular economy framework in October 2021.

The Asean framework calls for harmonisation of standards regarding circular products, trading openness, and initiatives broadly classified as environmental, social and corporate governance, a corporate sustainability framework.

At the same time, public policy in the regional bloc should include more support for monitoring flows of reusable materials, provision of subsidies for circular-inspired innovation, circularity-based corporate reporting requirements and tax exemptions for products made through circular processes.

A mix of spot-level interventions can be helpful, but a fundamental shift in production thinking and business models is the most durable way to promote circularity – particularly in areas beyond the reach of public policy.

A vision for regionwide circularity would go hand in hand with the Asean Economic Community's promotion of regional value chains, worker

upskilling and technology transfer.

The 2023 release of the Asean Circular Economy Stakeholder Platform holds potential in encouraging knowledge sharing and promotion of facilitative policies.

The next step should be an institutionalised and systematised monitoring mechanism to track progress, much in the same manner as the SDG tracker and the EU's circular economy monitoring framework. The EU framework's indicators for materials consumption and productivity, waste generation and management, trade in recycled materials, and softer factors like innovation and contribution to global sustainability can be a model for how Asean policymakers can target action.

Better flow of information through a material flow accounting database can also help producers identify potential partners and available streams of reusable scrap. This effort, as do many others, requires resource support, industry coordination and participation, and cross-jurisdiction regulatory consistency to track, analyse and circulate data.

The regionalisation and integration of the circular economy is an important and exciting moment for Asean. Home to numerous thriving industries but also vulnerable to the impacts of climate change, South-east Asia has an excellent opportunity to be a leader in sustainability thinking in the 21st century.

• Kris Hartley is assistant professor of public policy in the Department of Public and International Affairs at City University of Hong Kong.

### THE STRAITS TIMES

An SPH Media Limited publication

News Centre  
1000 Toa Payoh North  
Singapore 318994

### Wong Wei Kong

Editor-in-Chief, English,  
Malay & Tamil Media Group

### Jaime Ho

Straits Times Editor

### CONTACT US

General line: 6319-6319

Subscription matters:  
6388-3838

The Straits Times: 6319-5397

### Singapore

stnewsdesk@sph.com.sg

### World

stworld@sph.com.sg

### Forum

stforum@sph.com.sg

### Business

stnewsdesk@sph.com.sg

### Sport

stsports@sph.com.sg

### Life

stlife@sph.com.sg

### Digital

stnewsdesk@sph.com.sg

### Art

start@sph.com.sg

### Photo

6319-5328  
stimage@sph.com.sg