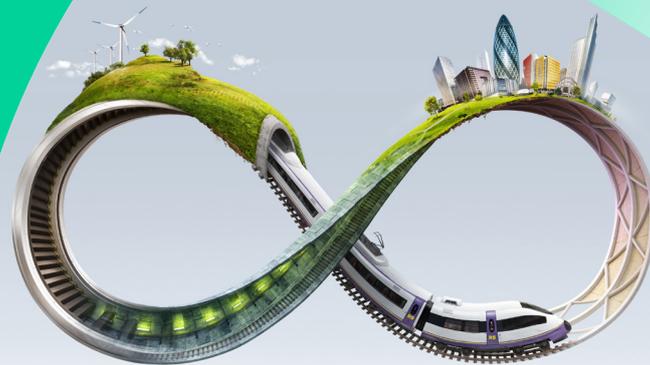


# Barriers and drivers for enterprises to transition to circular economy



---

## SEI discussion brief November 2021

Kuntum Melati  
Jae Nikam  
Phuong Nguyen

---

Current business practices exploit natural resources in an unsustainable way, and many enterprises and corporations still engage in a "take-make-dispose" linear practice in their production systems. This brief contributes to the discourse of circular economy practices by identifying barriers and drivers for enterprises, especially in Southeast Asia, to engage in circular economy practices. We conclude that in addressing the challenges, a systemic approach needs to be adopted, ensuring that all actors ranging from business sectors to policymakers work collaboratively to shift barriers to become the enablers in achieving the transformational change that is needed.

---

IMAGE (ABOVE): © RADOSLAV ZILINSKY / GETTY

---

## Key points:

- This brief highlights that companies are aware of circular practices, in terms of long-term economic and environmental benefits, but lack the necessary support to transition.
- Technical and knowledge barriers are the major hindrances for enterprises to transition to circular practices. Other barriers are financial, including financial structures within enterprises, lack of external financial support from banks and high upfront costs, lack of regulatory support (in form of policies and incentives), and lack of institutional and societal support.
- Availability of information via the internet, peer advice and trainings has been identified as one of the major drivers that supports enterprises' transition to circular practices. Other drivers include consumer, supplier and investor support, as well as regulatory support.

**Business leaders and enterprises often understand the benefits of circular economy approaches but lack appropriate support from policy and financial institutions to make the necessary investments towards change.**

---

## Introduction

The global economy has relied on the "take-make-waste" linear model, which depends on the excessive use of natural resources, putting enormous pressure on the planet's ecosystems. The linear economy proves to be inefficient due to loss of materials to landfills and under-utilization of the products. In manufacturing processes that depend on scarce materials, the impact of the linear model has been seen through price fluctuations and undersupply of raw materials (Het Groene, 2020), thus impacting the global availability of goods.

Materials consumption worldwide is set to increase eightfold in the 21st century, according to one estimate, and triple the amount of resources will be needed to meet global demand by the end of 2050 (Govindan & Hasanagic, 2018). In this context, the concept of circular economy provides a potential solution for rethinking and redrafting economic processes to be sustainable.

This brief aims to provide an overview and discussion of barriers and drivers for enterprises to adopt circular economy practices. The brief shares key findings from our research, which involved a literature review, an online survey with enterprises in the region, and an in-person workshop discussing circular practices with private companies and other circular economy stakeholders.

---

## Why is adopting circular business practices critical?

The global economy uses more than 100 billion tons of material every year and most of this is due to heavy demand for new virgin materials (Circle Economy, 2020). Although extraction materials have driven economic growth, this trend needs to be shifted in order to fulfil the growing population demand and address resource scarcity.

The global trends show that current practices are unsustainable. Two planetary boundaries (biodiversity and nitrogen cycle) have been transgressed, while three others are approaching their limits (Pheifer, 2017). In addition, the growing global population poses a great risk, as limited natural resources will not be sufficient for future generations at this rate, unless production and consumption patterns are transformed (Ellen MacArthur Foundation, 2012; Pheifer, 2017).

Embracing circular economy approaches could bring opportunities and benefits environmentally, socially and economically. Korhonen and colleagues (2018) described potential benefits in all three areas. Environmentally, such practices can reduce the input of virgin material, waste and energy consumption; economically, some of the benefits include opening up new potential markets and adding more value to products; and societal welfare could increase and cultivate a sense of community through shared economy practices that are typical of a circular economy (Korhonen et al., 2018).

## Methodology for literature review, workshop and survey

A systemic literature review was carried out using Google Scholar and Scopus. The searches were made with three search strings, focusing on the status of circular economy and the barriers and the enablers to circular economy transitions. A total of 3893 papers were shortlisted based on title relevance. Out of the 3893 papers, 100 were selected for in-depth analysis, based on summary and abstract relevance.

The workshop was held in person in Bangkok in partnership with SEED, under COVID-19 restrictions and with limited number of participants. We conducted a breakout group session that had about a dozen participants, including representatives of academia, international organizations and the Thai government. Over the span of two days, the stakeholders were asked to answer questions regarding the barriers and enablers they face for circular transitions.

The online surveys were constructed in Google Forms and distributed to SEI's contacts. Two surveys were conducted: one in Thai, which was distributed to Thai private sector personnel, and the other in English, distributed to contacts in Thailand as well as in other Southeast Asian countries. The Thai survey had 17 respondents and the English survey had 33 respondents; the majority were from Thailand, followed by Indonesia and Singapore. The online survey was targeted at respondents from middle and upper management. About 55% of the respondents were from small and medium-sized enterprises (SMEs) catering to consumer products, and a majority (about 44%) were top management, followed by board members. About 55% of the respondents were males.

---

## Barriers to building a circular economy

Despite global campaigns and the urgency to shift from linear to circular economies, practitioners from industry and the private sector face challenges to implement and adopt this concept. The current processes are still heavily driven by fossil fuel and mass production models, making them challenging to transform. According to our literature review and workshop and survey findings, the following are the main barriers faced by enterprises in Southeast Asia in their transition to circular practices.

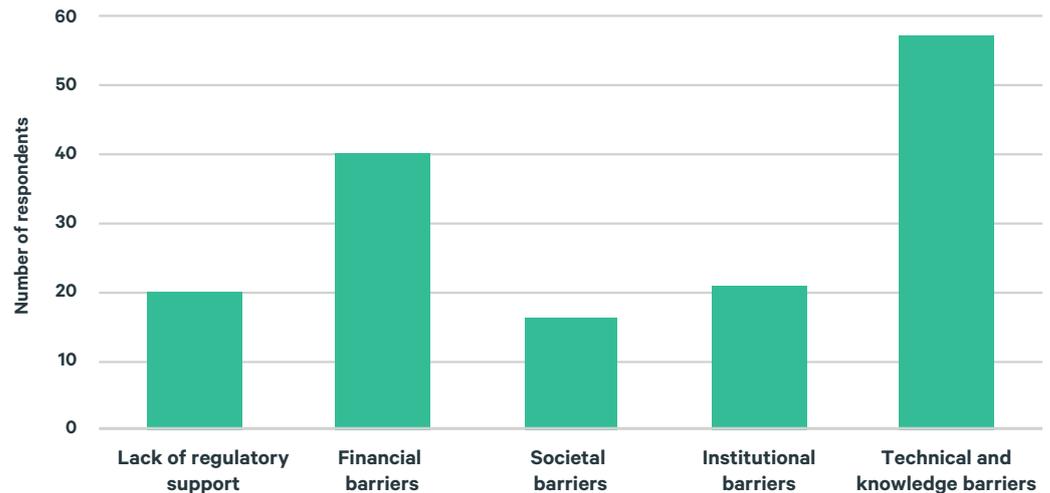
- **Taxes, subsidies and government support:** The subsidies, financial aid and uncoded externalities that support linear production processes are major hindrances in improving the financial competitiveness of circular economy approaches. In addition, unsupportive regulatory frameworks could become a stumbling block to change the linear business model. A report on regulation of packaging from the Association of Southeast Asian Nations (ASEAN) shows that even though ASEAN countries have various regulations on waste management and recycling, policy coherence is lacking and current policy has limited impact in driving circular economy (United Nations Environment Program, 2019).
- **Incentives in supply chain:** In many industries, the supply chain is limited for sustainable material alternatives that can be recovered for remanufacturing and reutilisation for another product. Furthermore, on average and in a short-term view, the cost of products produced through linear production processes is cheaper, and if there are no incentives such as tax relief and subsidies in the producer's supply chain to choose more sustainable materials, the production cost maybe increased, which may not be attractive to consumers.
- **Societal barriers related to consumer behaviour and perception:** Public acceptance is a cornerstone of market behaviour that has the potential to influence companies to shift their business models towards circularity. Companies can be led by consumer demand for sustainable products and services (Lee, 2016). Ignorance on the part of consumers of the environmental impact of goods and industrial activities continues to impede the transition processes (Achillas et al., 2011). If consumers do not have a positive perception of reused products, they have low incentives to engage in a transition process. In addition, more environmentally friendly products tend to have higher prices, since costs are incurred upfront, through investments in better design, research, technical expertise, different materials and infrastructure (such as for waste management). Price is still a dominant factor for customers to make purchasing decisions; however, lower prices in a linear production system do not include the negative impacts of products on the environment (Pheifer, 2017).
- **Infrastructure and institutional support:** Infrastructure that supports circular economy practices needs to be in place in order for a transition to occur smoothly. This includes waste management, treatment facilities, packaging, recycling processes, and many more systems related to any product's life cycle.
- **Lack of technical expertise in SMEs:** Another bottleneck to introducing circular practices is limited knowledge and technical know-how to shift from linear to circular product life cycles. Circular economy is more than just recycling; it starts from defining business strategy, circular input, product design and circular flows. Enterprises will need myriad innovations when they decide to integrate circularity in their practices. Technical expertise in sustainable practices is lacking, for ensuring that an enterprise's business model is aligned with circular economy principles. From the survey, only a small number of respondents (about 35%) have received training on topics related to circular economy, highlighting a general lack of expertise.

---

## Inputs from the survey and workshop with key stakeholders:

The survey showed that *technical and knowledge barriers* (i.e., lack of available technical expertise within and outside an organization and lack of available knowledge) ranked highest among the barriers that hinder enterprises in transitioning to circular practices. This was followed by financial barriers, including financial structure within an enterprise, lack of external financial support from banks, and high upfront costs. See Figure 1 for results from the survey, with a total number of 50 respondents.

Figure 1. Barriers to circular practice transitions



Source: Authors' own data

## What drives the business sector to integrate circular practices?

This section discusses the main drivers that help businesses to integrate circular practices identified from the literature and from the surveys and workshop we conducted. We determined these are internal and external support, opportunities to invest, and policy support.

### Internal and external support

For the implementation of circular economy strategies, it is important to have internal support through different company levels of management, as well as from employees, to enable the necessary changes to their production models. This includes political will on the part of management to make change and to build capacity. External support includes raising awareness from both the company and consumer side.

- **Organizational management:** The implementation of any new process takes place as a result of pressures from stakeholders or shareholders and commitment from top management (Govindan et al., 2015). Management commitment and support, such as proper training of employees and suppliers, have been an important influence on initiatives of organizations to implement circular practices (Dubey et al., 2019). Furthermore, a clear vision in terms of goals, objectives and targets is in very important during transitions (Pan et al., 2015).

- 
- **Consumer awareness and consumption norms:** In emerging economies, consumer awareness is the key factor in the adoption of circular principles (Patwa et al., 2020). Awareness, education, communication, information and economic factors have a major impact on the behaviour of a population and the movement towards the adoption of circular economy practices at all levels (Aras & Crowther, 2009).
  - **Increasing knowledge and skills:** Transitioning to circular practices will need various new skills and knowledge ranging from designing product that eliminate or minimise waste, operating new infrastructure, or handling new materials. The new job market that potentially arise will create demands for new set of expertise. Hence, training programs facilitated by experts, practitioners, or academicians, need to be provided to develop necessary capabilities, skills and tools (Pheifer, 2017).

## Opportunities to invest

Investments in broader value creation and beyond the linear value chains are necessary for establishing circular practices. There are a few ways for incentivising both the business sector and consumers to engage in sustainable production and consumption practices, as discussed below.

- **Sustainable supply chain management:** To ensure that the value of a product is maintained in a circular economy as the product stays “within the loop”, all stakeholders must be involved, from the design stage to the input material and finally “end of life” (if there is one) of a product. In producing “green” material, supply chains need to be sustainable, which means incorporating sustainable development at environment, social and economic levels in the production flow (Seuring & Müller, 2008). For social and economic levels, this means respecting human rights and labour law, as well as being inclusive, for example. Environmental circularity includes reducing toxic chemical inputs in production, sustainably sourced materials, and products designed to be returned, repaired and recycled (Aminoff & Kettunen, 2016; Nasir et al., 2017).
- **Technological innovation:** Technological developments and digitalization advances allow more efficient collaboration, transparency, authentication, knowledge sharing, better tracking of materials, improved logistics, and increased use of renewable energy. Research also shows that digitalization creates new opportunities by creating novel digital platforms and new markets based on virtualization. Additionally, new technologies like blockchain can help drive adoption of circular economy faster through legitimizing product origin and “incentivizing positive behavior change” (Lancelott et al. n.d.).
- **Cost structure:** One driver for companies to adopt circular practices is the potential to reduce costs, increase differentiation, and become less resource-dependent by recycling materials and eliminating waste from the industrial chain. Seeing that their consumption behaviours have a direct impact on the environment should encourage consumers to pay for a higher-price product. Increased consumer willingness to pay more allows companies to pass on higher costs from circular production.

## Policy support

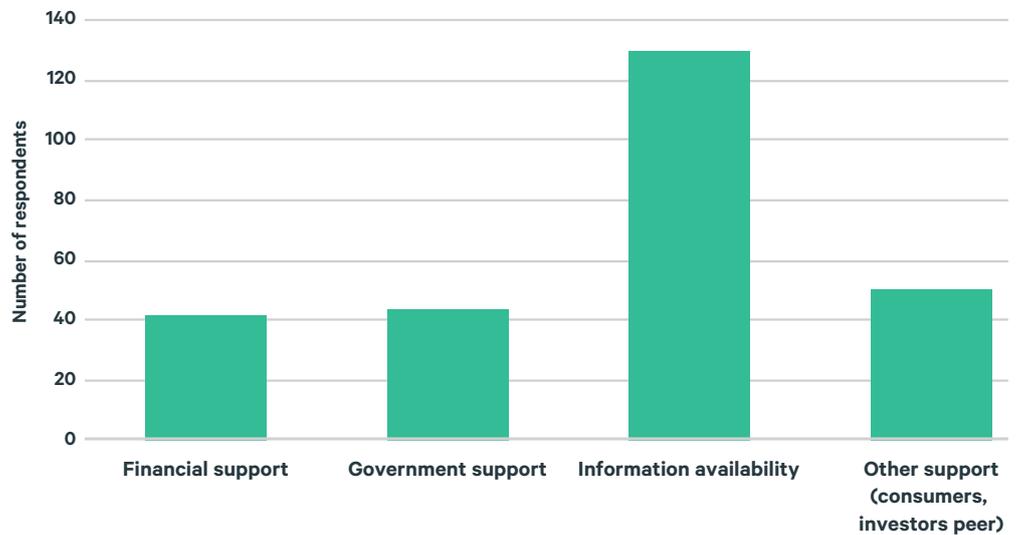
Government plays a critical role in encouraging innovation and new initiatives, as well as promoting international cooperation by creating platforms for all stakeholders in the private and public sector for idea exchange and cooperation (Liu & Bai, 2014). Based on our survey results, local, national, and regional government support were mentioned as the top drivers for SMEs to help make the transition to circular economy practices. Policies and regulations that support green business models need to be made accessible, especially for SMEs. For example, the workshop participants shared

that the Thai Department of Industrial Works and Department of Industrial Promotion can provide support through setting up standard waste management, to ensure better compliance for industry practices (Wolters et al., 2020).

### Inputs from survey and workshop with key stakeholders

Our study survey shows that availability of information via the internet, peer advice and trainings ranked highest among the drivers that support enterprises to transition to circular practices. This is followed by other support in the form of consumer, supplier and investor inputs. See Figure 2, showing drivers for transition to circular practices based on results from the survey of 50 respondents.

Figure 2. Drivers for transition to circular practices



Source: Authors' own data

## Conclusion

The collected information and data presented in this brief showcase the drivers and barriers that enterprises face in integrating circular economy practices in their business models. This supports the reasoning that even though awareness is high that the transition from a linear to a circular economy is needed, systemic barriers remain that hinder enterprises from taking action.

The pathway to circularity is complicated; our results show that to dismantle the barriers, a systemic approach needs to be adopted. Collective and synergistic actions from governments, policymakers, consumers, researchers, and enterprises and corporate management need to be taken, to ensure that a shift to circularity is effective.

---

## SEI research and initiatives on circular economy

The transition towards a circular economy is a collaborative effort by all stakeholders along value chains. SEI has been working on a range of initiatives to support the private sector and to enhance collaboration among various sectors, with the aim to promote and achieve sustainability in the private sector. Highlights of our initiatives include:

---

### ROUNDTABLE AT THE RESPONSIBLE BUSINESS FORUM

SEI organizes a roundtable to engage private stakeholders and others working towards sustainability in business, with the aim to discuss and exchange ideas, insights, tools, and experiences and to promote collaboration towards innovative solutions that address environmental sustainability, while integrating social inclusion and rights-based approaches. The initiative focuses on circularity and sustainability efforts by businesses, governments, researchers and civil society organizations. Covestro, Mountain Hazelnuts, Herbalife Nutrition and Coconut Merchant are some among the representatives from the private sector.

---

For more information on this activity, see: <https://www.sei.org/publications/transformational-change-through-a-circular-economy/>

---

### BUSINESS STAKEHOLDER WORKSHOP

SEI Asia partnered with the SEED Practitioner Labs for Policy Prototyping in Thailand to organize the stakeholder workshop for invited public and private sector stakeholders. These included financial institutions, small and medium-sized enterprises (SMEs) and their intermediaries to discuss the barriers and challenges that hinder them from adopting circular business models. The aim of this workshop was to foster a dialogue between different stakeholders, to provide a forum for SMEs to voice their experiences, and to discuss concrete suggestions for the circularity transition.

---

For more information on this activity, see: <https://seed.uno/articles/recommendations-for-supporting-smes-in-the-transition-to-circular-economy-a-perspective-on-thailand>

---

### UPMADE – SEI INITIATIVE ON CIRCULAR ECONOMY

Upcycling is a growing trend that helps to save resources and avoid textile waste. Reet Aus, an award-winning designer from Estonia, teamed up with SEI Tallinn to create a novel circular business model, called UPMADE. The UPMADE model has been adopted by several brands and a number of textile manufacturers in Bangladesh, India and Europe. It helps brands to cut down their textile waste by channelling leftovers back into the design and production of new garments.

---

For more information on this activity, see: <https://www.sei.org/featured/upmade-circular-fashion-industry/>

## References

- Achillas, Ch., Vlachokostas, Ch., Moussiopoulos, N., Baniyas, G., Kafetzopoulos, G., & Karagiannidis, A. (2011). Social acceptance for the development of a waste-to-energy plant in an urban area. *Resources, Conservation and Recycling*, 55(9–10), 857–863. <https://doi.org/10.1016/j.resconrec.2011.04.012>
- Aminoff, A., & Kettunen, O. (2016, April 5). *Sustainable Supply Chain Management in a Circular Economy—Towards Supply Circles*.
- Aras, G., & Crowther, D. (2009). Making sustainable development sustainable. *Management Decision*, 47(6), 975–988. <https://doi.org/10.1108/00251740910966686>
- Circle Economy. (2020). *The Circularity Gap Report 2020*. The Platform for Accelerating the Circular Economy (PACE). [https://assets.website-files.com/5e185aa4d27bcf348400ed82/5e26ead616b6d1d157ff4293\\_20200120%20-%20CGR%20Global%20-%20Report%20web%20single%20page%20-%20210x297mm%20-%20compressed.pdf](https://assets.website-files.com/5e185aa4d27bcf348400ed82/5e26ead616b6d1d157ff4293_20200120%20-%20CGR%20Global%20-%20Report%20web%20single%20page%20-%20210x297mm%20-%20compressed.pdf)
- Dubey, R., Gunasekaran, A., Childe, S. J., Papadopoulos, T., & Helo, P. (2019). Supplier relationship management for circular economy: Influence of external pressures and top management commitment. *Management Decision*, 57(4), 767–790. <https://doi.org/10.1108/MD-04-2018-0396>
- Ellen MacArthur Foundation. (2012). *Towards the Circular Economy: Economic and business rationale for an accelerated transition*. Ellen MacArthur Foundation. <https://www.ellenmacarthurfoundation.org/publications/towards-the-circular-economy-vol-1-an-economic-and-business-rationale-for-an-accelerated-transition>
- Govindan, K., Diabat, A., & Madan Shankar, K. (2015). Analyzing the drivers of green manufacturing with fuzzy approach. *Journal of Cleaner Production*, 96, 182–193. <https://doi.org/10.1016/j.jclepro.2014.02.054>



#### Published by

Stockholm Environment Institute  
Linnégatan 87D, Box 24218  
104 51 Stockholm, Sweden  
Tel: +46 8 30 80 44

#### Author contact

kuntum.melati@sei.org

#### Media contact

rajesh.daniel@sei.org

Visit us: [sei.org](http://sei.org)

Twitter: [@SEIresearch](https://twitter.com/SEIresearch)  
[@SEIclimate](https://twitter.com/SEIclimate)

Stockholm Environment Institute is an international non-profit research and policy organization that tackles environment and development challenges. We connect science and decision-making to develop solutions for a sustainable future for all.

Our approach is highly collaborative: stakeholder involvement is at the heart of our efforts to build capacity, strengthen institutions, and equip partners for the long term.

Our work spans climate, water, air, and land-use issues, and integrates evidence and perspectives on governance, the economy, gender and human health.

Across our eight centres in Europe, Asia, Africa and the Americas, we engage with policy processes, development action and business practice throughout the world.

- Govindan, K., & Hasanagic, M. (2018). A systematic review on drivers, barriers, and practices towards circular economy: A supply chain perspective. *International Journal of Production Research*, 56(1–2), 278–311. <https://doi.org/10.1080/00207543.2017.1402141>
- Het Groene. (2020). *What are the disadvantages of the current linear economy?* Knowledge Map Circular Economy. <https://kenniskaarten.hetgroenebrein.nl/en/knowledge-map-circular-economy/ce-disadvantages-linear-economy/>
- Korhonen, J., Honkasalo, A., & Seppälä, J. (2018). Circular Economy: The Concept and its Limitations. *Ecological Economics*, 143, 37–46. <https://doi.org/10.1016/j.ecolecon.2017.06.041>
- Lancelott, M., Chrysochou, N., & Archard, P. (n.d.). *Blockchain can drive the Circular Economy*. <https://www.paconsulting.com/insights/blockchain-can-drive-the-circular-economy/#:~:text=The%20Circular%20Economy%20promises%20to,resource%20usage%20and%20reduce%20waste.&text=Blockchain%20has%20the%20potential%20to%20build%20that%20trust.>
- Lee, K. (2016, August 25). Modern Consumerism in ASEAN: An Overview. *HK TDC Research*. <https://research.hktcdc.com/en/article/NDkxODU4Mjk4>
- Liu, Y., & Bai, Y. (2014). An exploration of firms' awareness and behavior of developing circular economy: An empirical research in China. *Resources, Conservation and Recycling*, 87, 145–152. <https://doi.org/10.1016/j.resconrec.2014.04.002>
- Nasir, M. H. A., Genovese, A., Acquaye, A. A., Koh, S. C. L., & Yamoah, F. (2017). Comparing linear and circular supply chains: A case study from the construction industry. *International Journal of Production Economics*, 183, 443–457. <https://doi.org/10.1016/j.ijpe.2016.06.008>
- Pan, S.-Y., Du, M. A., Huang, I.-T., Liu, I.-H., Chang, E.-E., & Chiang, P.-C. (2015). Strategies on implementation of waste-to-energy (WTE) supply chain for circular economy system: A review. *Journal of Cleaner Production*, 108, 409–421. <https://doi.org/10.1016/j.jclepro.2015.06.124>
- Patwa, N., Sivarajah, U., Seetharaman, A., Sarkar, S., Maiti, K., & Hingorani, K. (2020). Towards a circular economy: An emerging economies context. *Journal of Business Research*, 122, 725–735. <https://doi.org/10.1016/j.jbusres.2020.05.015>
- Pheifer, A. G. (2017). *BARRIERS & ENABLERS to Circular Business Models*. <https://www.circulairondernemen.nl/uploads/4f4995c266e00bee8fdb8fb34fbc5c15.pdf>
- Seuring, S., & Müller, M. (2008). From a literature review to a conceptual framework for sustainable supply chain management. *Journal of Cleaner Production*, 16(15), 1699–1710. <https://doi.org/10.1016/j.jclepro.2008.04.020>
- United Nations Environment Program. (2019). *The Role of Packaging Regulations and Standards in Driving the Circular Economy*. <https://wedocs.unep.org/bitstream/handle/20.500.11822/30736/PKGGE.pdf?sequence=...>
- Wolters, L., Ong, S., & Wanopas, L. (2020). *Recommendations for Supporting SMEs in the Transition to Circular Economy: A perspective on Thailand* [<https://seed.uno/articles/recommendations-for-supporting-smes-in-the-transition-to-circular-economy-a-perspective-on-thailand>].