

# Post-Pandemic Plastic Pollution Outlook

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# Kathleen B. Aviso, Ph.D.



## Career highlights

- ❑ Professor and University Fellow, De La Salle University
- ❑ Dean, Gokongwei College of Engineering, DLSU
- ❑ Former PAASE president (2019) and VP (2018)
- ❑ 199 publications, ~2700 citations, and *h*-index = 29 (Scopus)
- ❑ BS ChE (UPD), MS EnvE (DLSU), and PhD IE (DLSU)
- ❑ Multiple scientific awards from the CHED, NAST, NRCP, PAASE, and PhilAAST
- ❑ Executive Editor of *Journal of Cleaner Production* (Elsevier)
- ❑ Editorial Board Member of *Process Integration and Optimization for Sustainability* (Springer Nature), *Computers in Industry* (Elsevier), and *Digital Chemical Engineering* (IChemE/Elsevier)
- ❑ Editorial Advisory Board of *Heliyon* (Elsevier)
- ❑ Author of *Input-Output Models for Sustainable Industrial Systems* (Springer Nature)
- ❑ Editor of *Encyclopedia of Sustainable Technologies* (Elsevier)

## Areas of interest

- ❑ Process systems engineering, process integration, life cycle assessment, input-output modelling, P-graph

# An Emerging Global Issue



World Africa Americas Asia Australia China Europe India Middle East United Kingdom



## UN agrees to create world's first-ever plastics pollution treaty in a blow to big oil

Story by Reuters

🕒 Updated 1706 GMT (0106 HKT) March 2, 2022



A garbage collector gathering recyclable plastic at the Ban Tarn landfill site in the Thai province of Chiang Mai.

# Based on our 2020 CLRC Paper



Contents lists available at [ScienceDirect](https://www.sciencedirect.com)

## Cleaner and Responsible Consumption

journal homepage: [www.journals.elsevier.com/cleaner-and-responsible-consumption](http://www.journals.elsevier.com/cleaner-and-responsible-consumption)



### Can disruptive events trigger transitions towards sustainable consumption?

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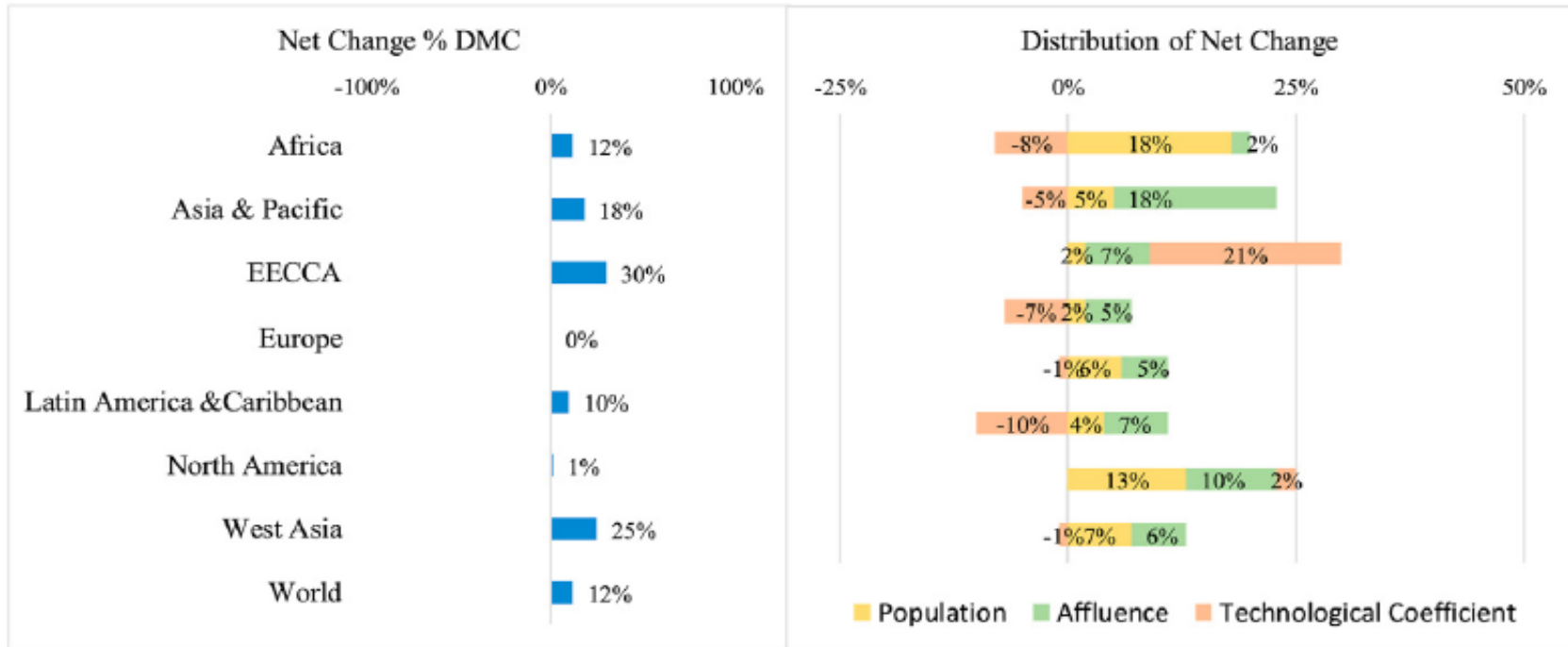
Poka-yoke  
Sustainable consumption  
Systems thinking  
Choice architecture  
Nudge Theory

#### ABSTRACT

Disruptive events have historically been shown to upset business as usual practices and lasting changes. The emergence of a pandemic in 2020 triggered a rapid transition as digital platforms are able to support essential socio-economic activities through virtual products that remain a physical output of raw material consumption. Furthermore, digital platforms provided consumers access to more products than they normally need, allowing for “therapy” and “revenge procurement”. As widespread digital consumption becomes a reality, we caution against unsustainable consumption practices in the digital world, and propose a systemic design-based poka-yoke strategy as a feasible pathway to sustainable consumption. This strategy accounts for the consumption of both intermediate and final products, (i) a design philosophy in developing products and services, and (ii) limiting consumer choices to sustainability-proofed products to lock-in sustainable consumption.



# Drivers of Material Footprint (2010–2015)



# Six Takeaway Points

- ❑ Plastic pollution is a serious global environmental concern
- ❑ The pandemic has exacerbated plastic pollution
- ❑ Both top-down (global treaty) and bottom-up (personal responsibility) measures are needed to manage plastic pollution
- ❑ Producer and consumer choices are intricately linked
- ❑ Future solutions cover three dimensions: policy, technology, and behavior
- ❑ Circular Economy concepts provide a framework for possible integrated solutions

**Thanks for your attention**

Comments and questions are welcome

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