

Yao Yuanchen (China)
Tokyo University of Foreign Studies

Meeting the Challenge of Plastic Waste Recycling in Japan and China

Public Health and the Natural Environment



Foreword and Acknowledgements

2020 was a year like no other as the pandemic changed many aspects of our lives. In a sense, that made early 2021 an ideal time to ask the question: how would you address some of the biggest challenges in Asia in the coming decade? In January 2021, the Asia Business Council joined hands with Nikkei Asia and the Blavatnik School of Government at the University of Oxford to launch the Asia's Challenge 2030 Global Essay Competition, open to students aged 18-22 anywhere in the world.

Given the many obstacles facing young people pursuing their studies during a global pandemic, we did not know how many essays we would receive. Yet we were impressed by thoughtful submissions from universities across Asia and as far afield as California and London. We pored over essays on topics ranging from artificial intelligence and aquaculture to smart cities and virus sequencing and learned a lot in the process.

The essays reflect a generation that is asking hard questions about the challenges facing Asian societies and optimistic about the prospects for creating a better world through new modes of doing business and innovative approaches to policymaking.

Young people from Asia are increasingly globally aware. They want policymakers to adopt international best practices in public health and environmental protection, especially in areas like sustainable finance and mental health awareness. But they reject the uncritical adoption of Western models, from urban design to economic development. Many call for a celebration of their unique national and regional identities, whether through locally inspired architectural designs or the increased representation of indigenous perspectives.

Participants in the Economy, Trade, and Finance category want to improve existing economic models so that a balance is struck between economic growth and a fairer, more sustainable, and more stable world.

In the Public Health and the Natural Environment category, respondents called for holistic approaches to health. Concerns about mental wellness reflect the pressures brought about by increasingly competitive academic and professional environments, while essays about communications and interpersonal relationships demonstrate the desire for a more intentional focus on modeling healthy relationships. Still other submissions addressed the existential crisis posed by climate change and the complicated web of interrelated challenges, from plastic waste to fossil fuel use. Proposed solutions range from changes in consumer behavior to an entirely new model of development.

In the Cities and Urban Development category, the essays we received reflected a desire for smarter, more walkable, climate resilient cities, and urban environments that reflect their unique local character. Whether as consumers, as employees, or as entrepreneurs themselves, this younger generation will demand that businesses and governments adopt sustainable practices and modes of operation that benefit their communities.

This global essay competition would not have been possible without the support of the former and current Chairmen of the Asia Business Council, Lim Boon Heng of Temasek and Daniel Tsai of Fubon Group. We are also indebted to Vice-chairman Tak Niinami of Suntory Group and Council Trustee Nazir Razak of Ikhlas Capital, who made key introductions to Nikkei Asia and the Blavatnik School.

Special thanks must also go to Shigasaburo Okumura and Daisuke Akazawa, Editor-in-chief and Chief Producer of Nikkei Asia, and Ngaire Woods and Luna Sidhu, Founding Dean and Director of Development of the Blavatnik School, for making this competition possible.

We would also like to thank our judges who generously volunteered their time and energy.

Economy, Trade, and Finance category:

- Nobuyoshi John Ehara, Co-founder, Unison Capital
- Emily Jones, Associate Professor, Blavatnik School of Government
- Katsuhiko Hara, Chief Desk Editor, Nikkei Asia

Public Health and the Natural Environment category:

- George Tahija, Principal, PT Austindo Nusantara Jaya Tbk
- Maya Tudor, Associate Professor, Blavatnik School of Government
- Futoshi Kuwamoto, Business & Market News Editor, Nikkei Asia

Cities and Urban Development category:

- Zhang Xin, Founder and CEO, SOHO China
- Sir Paul Collier, Professor, Blavatnik School of Government
- Shin Nakayama, News Editor, Nikkei Asia

Finally, we would like to acknowledge the assistance of Ashleigh Au of SOHO China Scholarships and Ruth Collier of Oxford University in publicizing the contest.

There is no doubt that this generation will be profoundly shaped by the experience of living through the world-altering events of 2020 during their formative years. But most essays took the longer view instead of focusing solely on the pandemic, looking ahead to the challenges of the next decade and beyond. Policymakers and business leaders around the world should take note of their ideas as this young generation comes of age and begins to lead local and international development in multiple fields.



Pauline Yeung
Program Director
Asia Business Council



Colleen Howe
Program Associate
Asia Business Council

Award-winning Essays

Economy, Trade, and Finance

Krati Gupta (India)

Rajiv Gandhi National University of Law

The Three Pillar Multi-Stakeholder Approach to Responsible Financing:
Addressing Asia's Challenges in the "Decade of Action"

Chloris Jiaqi Kang (Singapore)

National University of Singapore

Private Money for the Public Good –
Unlocking Private Equity for Asia's Sustainable Finance

Henry Michael Mayhew (United Kingdom)

University College London

Asian Central Bank Mandates: What about Equality?

Public Health and the Natural Environment

Hanun Thalia (Indonesia)

Universitas Indonesia

KomU as a Strategy to Improve Family Communications

Yao Yuanchen (China)

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Suzu Yokoyama (Japan)

Tsuda University

Tackling Unrealistic Beauty Standards in Japan and South Korea

Cities and Urban Development

Matthew Flores (Philippines)

Ateneo de Manila University

Indigenous Cities: Reframing Modernity and Our Cities

Rya Jetha (United States)

Pomona College

Reinventing the Asian Megacity: Absorbing Climate Change with Sponge Design

Ranita Ma Tsz Yu (Hong Kong SAR)

Chinese University of Hong Kong

From a City-scale Beauty Pageant to a Continent-wide Diversified Gallery

Ashley Faith Santoso (Indonesia)

Atma Jaya Catholic University of Indonesia

The Neglected Effects of Gender-based Violence towards Jakarta's Urban Walkability

Yao Yuanchen (China)

Tokyo University of Foreign Studies

Meeting the Challenge of Plastic Waste Recycling in Japan and China

Introduction

Plastics have played an important role in human industrial development and livelihoods in the 20th century. However, plastic waste nowadays has become a serious problem which may endanger human health and the global environment. According to the UN, Japan ranks second in the world in terms of plastic packaging waste per capita. Although Japan recycled an impressive 84 percent of the plastic collected in 2018, there are still structural problems. By contrast, China has been the world's largest solid waste importer for the last quarter century, which shows that China's ecological environment has paid a huge price for developed countries to achieve low-cost resource recycling. This essay explains the different stages of plastic waste recycling in Japan and the issue of China's environmental regulation. The possible solutions which can be achieved by 2030 including a stop on exporting plastic waste, improving the quality of plastics used, and most importantly, raising public awareness through education.

Background

In Japan, in order to prevent solid waste pollution, the government has issued a number of laws in recent years to prohibit environmental damage in the process of garbage recycling and disposal and require companies to reuse recyclable garbage. However, due to the high cost of waste disposal and reuse, the related companies face operating losses. As a result, Japan has begun to export a large amount of waste overseas, and China became the largest market for dumping Japan's waste.

Recycling of Plastic Waste in Japan

In the 1980s, when Japan entered the "bubble economy" period, people attached great importance to the exquisite packaging of goods, especially when sending gifts. The sudden boom in the economy led to a sharp increase in both the amount and type of garbage, forcing the Japanese government to adjust its waste management policies. With the cooperation of the Japanese public, by the 1990s, sorting and disposal procedures for garbage and recyclables were fully rolled out and achieved good results. However, plastic waste accounts for a huge proportion of the remaining waste that is not reused. At that time, plastic waste was classified as non-burnable waste, which meant most of the plastics were dumped at landfills without recycling.

Intensive incineration

With an increasing amount of garbage and a shortage of landfills, Japan's urgent demand was to develop a proper way of recycling plastic waste. While Japan recycled 84 percent of the plastic collected in 2018, more than half of the collected plastic

goes through thermal recycling, which means that the plastic waste is burned in incinerators to generate energy. Without filtering technology, incineration releases a huge quantity of dioxins and CO₂ into the atmosphere. This has triggered health concerns since many of the emissions are carcinogenic and there is stigma against local produce. From this perspective, Japan failed to put the 3R policy (recycle, reduce, reuse) as the heart of its waste strategy, and instead achieved a “high recycling rate” by relying on incineration, which caused other forms of pollution. Even with its technological advantages, Japan lacks sufficient efforts to promote the recycling of plastic resources and excludes many plastic products that could be further recycled and reused.

Export of plastic waste to China

Just like other developed countries, Japan has high domestic labor costs and strict processing environment standards. It is unprofitable to recycle and even requires local governments to pay high subsidies for recycling. This has thus triggered a rapid increase in the export of waste plastics to developing countries such as China and India. Indeed, China has been a major global importer of waste products in recent decades. Asia generated 74% of the plastic waste in the world in 2016, and until 2017 Mainland China imported the most plastic waste, such that it has been described as “the wasteyard of the world.”

Country	Municipal solid waste (MSW) 2016	Industrial Solid Waste (ISW) 2016	Plastic ratio in MSW%	Plastic waste in MSW	Plastic waste in ISW	Total plastic waste 2016	Total plastic waste 2016	Total plastic waste 2016
China	203.6	1480	13	30.54	18.5	49.04	49.19	49.71
India	71.2	715.1	10	8.54	8.9	17.48	17.58	17.66
Japan	43.2	392.8	12	6.04	4.9	10.95	11.07	11.19

(Statistics on waste plastic generation in Asian countries (Mt), Liang, Yangyang et al, January 2021)

As the world’s largest plastic producer and consumer, China is actively developing a management policy for global plastic waste. In July 2017, China announced a ban on plastic waste imports to reduce pollution in the recycling process. Consequently, this ban resulted in Japan increasing exports of plastic waste to alternative countries such as Thailand and Vietnam.

Promoting Public Awareness in Japan and China

In Japan, single-use plastics can be found in all aspects of everyday life. It is common to get free forks and spoons with bento boxes in any Japanese convenience store. Due to Japan’s culture of gift-giving, not only souvenirs at the shopping mall, but even fruit and vegetables may be wrapped in multiple layers of plastic. It is said that “every person in Japan uses around 300 or 400 plastic bags a year, or more than 40 billion for the entire nation.” However, people are so used to the convenience culture that they hardly think of how difficult it is for the plastics to be decomposed. Therefore, raising public awareness has become an urgent issue for the Japanese government to solve.



(Bananas ft. Hello Kitty in Tokyo store, Fran W, 2020)
(Over packaging is a real problem, Robin Lewis, 2019)

In China, even though the government has tightened import policies, the major problem is that there is not enough public awareness, especially in rural areas. The classification system for domestic waste has had little effect due to the public's limited knowledge of garbage sorting. Moreover, many garbage recycling workers have to stand by the bins every day just to untie the plastic bags and separate garbage into the different bins. It shows that many people nowadays still cannot figure out what is “recyclable” or “non-recyclable” since there is no detailed guidance or proper fining system.

Fortunately, new regulations are being announced in major cities starting with Shanghai. In 2019, Shanghai entered a new stage of garbage recycling and required people to sort trash into four categories--residual waste, wet waste, recyclable waste, and hazardous waste. Individuals who fail to do so may be fined up to 200 yuan. This policy raised public awareness and even reduced the number of plastic cutleries in takeaways. So far, nine cities including Beijing, Shanghai, Taiyuan, Changchun, Hangzhou, Ningbo, Guangzhou, Yichun, and Yinchuan have issued domestic waste management regulations. A possible aim by 2030 for China can be the popularization of the new garbage regulation even in rural areas.

Conclusion

Overall, both Japan and China are still on their way of improving new regulations to deal with plastic waste. In my opinion, the challenge for Japan by 2030 is firstly to stop exporting plastic scraps so that people can truly realize the importance of reducing plastic production. In order to build a new recycling system by increasing the recycling rate, Japan has to take responsibility for its own garbage rather than shipping it to developing countries. Secondly, Japan should innovate technology for improving low-grade plastics that can be easily reused. It may be unprofitable at the beginning but is definitely worth developing over the long term. Thirdly, a competitive system such as “Green City” can be set up to encourage citizens' passion for maintaining the image of their hometown. The local government of the most green city should be awarded a prize to complete further construction.



(Models wearing a garbage bag dress, Pinterest, 2017)

Most importantly, the lack of public awareness is a common issue for both Japan and China. Spreading basic recycling knowledge through radio, television, newspapers, fashion shows, or exhibitions of plastic products, especially at schools, can attract young people's attention, which may be one of the best ways to strengthen environmental awareness. Finally, all countries should tighten their own environmental regulations to reduce traded waste in Asia. In 2019, 180 countries and regions around the world unanimously adopted the amendment to the Basel Convention in Geneva, Switzerland. It is a global mission to incorporate the management of plastic waste into a legally binding framework, which will make the global plastic waste trade more transparent. With global cooperation, improving waste management will surely secure human health and the environment.

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