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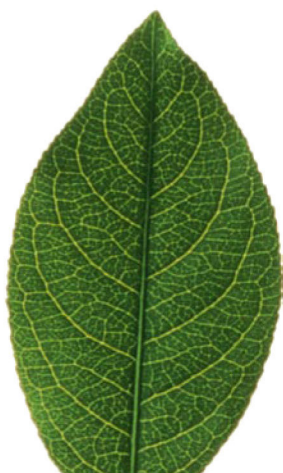
LEAD

**TAIWANESE PLASTICS VERSUS SUSTAINABILITY - FROM THE
PERSPECTIVE OF GLOCALIZATION OF SUSTAINABLE
DEVELOPMENT AND CIRCULAR ECONOMY**

Chung-Hsien Lee

**ARTICLE - SPECIAL ISSUE ON DESIGNING LAW AND POLICY
TOWARDS MANAGING PLASTICS IN A CIRCULAR ECONOMY**

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1

INTRODUCTION

This paper aims to investigate the case of Taiwan regarding its strategy for plastics in a circular economy, in particular reforms between 2002 to 2018. To do this, the paper analyses the inconsistent regulatory history of regulating disposable plastic products in Taiwan and the recently reinitiated momentum, which reflects the vacillation of Taiwanese people and government. On the one hand, these regulations on disposable plastic products earn strong support from society, which can be seen from polls made by Taiwanese Environmental Protection Administration (EPA) on these regulatory measures. On the other hand, official statistics show that on average each person in Taiwan consumes more than 700 pieces of plastic bags per year.¹ This figure indicates that after more than a decade of restrictions on one-off plastic bags, social norms were not altered to influence individual consumption habits. People are still used to convenient and cheap plastic bags. Similarly, the Taiwanese government has been ambiguous in how it balances environmental protection and economic considerations. The aforementioned vacillation in Taiwan society may be purposely drawn upon by the EPA from time to time as a reason of action or excuse for non-action.

1.1 Background to Taiwan's Reforms: Climate Change, Blue Ocean and China's Ban on Waste

The wider backdrop to Taiwan's 2018 plastics regulation reforms, that are the focus of this paper, are worldwide focus on plastics, as well as long-standing concerns over excessive reliance on petroleum in modern society and the consequent result of climate change. The current

policy impetus follows a surge in public support on dealing with marine plastic litter, attributed to documentaries such as David Attenborough's BBC Blue Planet series.² The EU's policy reforms around the circular economy may also be consequential to China's announcement on July 18 2017 concerning the ban on the import of 32 scrap categories, which takes effect for 16 categories by the end of 2018, and another 16 by end of the 2019.³

This background indicates that the origin, degradation, and solution of plastic pollution are all of transnational or even global nature. Therefore, any success of the municipal regulation on plastic products must have global vision. Furthermore, it must take other jurisdictions into consideration.⁴ International cooperation will only be possible through such an

2. Hugo Rifkind, 'Watching David Attenborough's Blue Planet II Turned the Queen Green' *The Australian* (Sydney, 13 February 2018) <<https://www.theaustralian.com.au/world/the-times/watching-david-attenboroughs-blue-planet-ii-turned-the-queen-green/news-story/aef18ae88c7683e578e4681a682cfa48>>; Imogen Calderwood, '88 Per Cent of People Who Saw 'Blue Planet II' Have Now Changed Their Lifestyle' *Global Citizens* (London, 1 November 2018) <<https://www.globalcitizen.org/en/content/88-blue-planet-2-changed-david-attenborough/>>; Melissa Locker, 'Blue Planet II is Inspiring People to Give up Plastic—And You Should Join in' *Fast Company* (New York, 21 February 2018) <<https://www.fastcompany.com/40534098/blue-planet-ii-is-inspiring-people-to-give-up-plastic-and-you-should-join-in>>.

3. Kate O'Neill, 'The New Global Political Economy of Waste' in Peter Dauvergne and Justin Alger (eds), *A Research Agenda for Global Environmental Politics* (Edward Elgar 2018); Cole Rosengren, 'China Announces Formal Ban on 32 Scrap Categories' (*Waste Dive*, 19 April 2018) <<https://www.wastedive.com/news/china-announces-formal-ban-32-scrap-categories/521735/>>; Yen Nee Lee, 'The World is Scrambling Now that China is Refusing to be a Trash Dumping Ground' (CNBC, 16 April 2019) <<https://www.cnbc.com/2018/04/16/climate-change-china-bans-import-of-foreign-waste-to-stop-pollution.html>>.

4. Nicky Gregson and others, 'Interrogating the Circular Economy: The Moral Economy of Resource Recovery in the EU,' (2015) 44 (2) *Economy and Society* 218.

¹ 吳欣紘, 世界地球日啟動 環團籲減塑 中央通訊社 [Wu Xinyu, '世界地球日啟動 環團籲減塑' [Environmental NGOs call for reductions in using plastics]] (Central News Agency, 22 March 2018) <<https://www.cna.com.tw/news/ahel/201803220179.aspx>>.

approach.⁵ Accordingly, it will be beneficial if researchers can draw upon experience and lessons from others' practices.

Recently, a notable advance on regulating single used plastic products by the European Union (EU) has attracted global attention. In January 2018, the European Commission formulated 'A European Strategy for Plastics in a Circular Economy' (Strategy for Plastics) as communication to the European Parliament and the Council. The Strategy for Plastics put forward a strategic target on reaching the 2030 Sustainable Development Goals and the Paris Agreement through a circular economy.⁶ Therefore, the redesigning of plastics industry, from the design, production, consumption, (re)use, repair and recycling to the discard of plastics, must all align with this strategy.

In May 2018, the European Commission began to push through the 'Proposal for a Directive of The European Parliament and of The Council on the reduction of the impact of certain plastic products on the environment'.⁷ In October 2018, the European Parliament overwhelmingly approved (571-53) the wide-ranging ban.⁸ The law was eventually adopted in 5 June 2019. This Directive impose a complete ban on a range of single-use plastics, and 'where no alternative exists', the use of such single-use plastics still needs to be reduced by 25 per cent across the union by 2025. These goals show that the EU has stepped up its pace toward a circular plastics economy.

1.2 Why the Case of Taiwan is Relevant?

As the introductory paragraph illustrated, the case of Taiwan is significant because of its high plastic usage, but also the way in which recent reforms have mirrored global policy push in curbing plastic waste. Taiwan's potential to be a reference point for EU can be observed from the official document 'EU-Taiwan Relations 2018', which states that 'Being like-minded partners, where Taiwan has also set itself ambitious targets on waste reduction and a target of 61 per cent recycling rate by 2020, cooperation between the EU and Taiwan is deepening. Both sides are making efforts to enhance cooperation on the circular economy and discussing steps towards the creation of a low waste economic model'.⁹ From some perspectives, Taiwan is ahead of the EU regarding its ambition toward recycling rates. While EU has had a mission for recycling 65 per cent of municipal waste and 75 per cent of packaging waste by 2030, Taiwan targets to reach the recycling rate of waste beyond 60 per cent by 2020.

This paper hopes to illustrate that each jurisprudence should learn from each other. However, this learning is not as simply as to imitate other's institutional designs or to transplant any universal template. Also, the aim of comparison is not for individual jurisdictions to compete and boast regarding which policy plan is more ambitious or fit onto the universal template the best. Rather, it is more about to inspect and understand the struggle and hesitation on their approaching to global sustainable development in local context through diverse manners.

5 Ansje Löhr and others, 'Solutions for Global Marine Litter Pollution' (2017) 28 *Current Opinion in Environmental Sustainability* 90, 95.

6 Commission, 'A European Strategy for Plastics in a Circular Economy' (Communication) COM (2018) 28 final.

7 Commission, 'Proposal for a Directive of the European Parliament and of The Council on the reduction of the impact of certain plastic products on the environment' COM (2018) 340 final.

8 Council Directive 2019/904/ EU of 5 June 2019 on the reduction of the impact of certain plastic products on the environment [2019] OJ L155/1.

9 European Economic and Trade Office in Taiwan, '2018 EU-Taiwan Relations' (European Economic and Trade Office 2019) < https://eeas.europa.eu/sites/eeas/files/2018_eu-taiwan_relations_en.pdf>.

2

REGULATORY HISTORY AND MEASURES AGAINST PLASTIC PRODUCTS IN TAIWAN SINCE 2002

This section first outlines the history of regulatory measures against plastics in Taiwan since 2002.

2.1 The 2002 Initiative and its Disappointing Result

In 2002 Taiwan pronounced its first step in phasing out the use of single-use plastic shopping bags and plastic utensils.¹⁰ In order to encourage the uptake of reusable shopping bags, the EPA kicked off the first stage of the plastic restriction policy by ceasing the distribution of plastic bags and starting charging customers accordingly. Seven major sources or categories of targets were subject to these restrictions, namely, government facilities, private schools, department stores/ shopping malls, wholesale stores, supermarkets, chain convenience stores, and fast food chains.

Though the public broadly accepted the underlying idea that the volume of waste could be reduced if fewer products are thrown away after a single use, the regulation was facing serious setbacks due to critics and protests from the plastic industry and the food service

business.¹¹ While fully aware that the disposable plastic bags and eating utensils provided by the eatery, snack stand, or stallholders in night markets are taking toll of the environment, the Taiwanese community also find it is difficult to resist the convenience and affordability of plastic products. Under the enormous pressure, the EPA removed foodservice retailers from the regulation plan on plastic bag in 2006.¹² Similarly, the planned prohibition on the use of single-use utensils for street vendors and stallholders in night markets was also put off.¹³ Following the implementation of the measures, the EPA reported a drop in disposable plastic bag use of 58 per cent, from 3.435 billion plastic bags down to 1.43 billion annually, around 10 thousand tons in weight.¹⁴ To many, it looks like an undoubted success as happened in other places around the world.¹⁵

10 The Environmental Protection Administration, 環署廢字第0910025775號函：「購物用塑膠袋及塑膠類（含保麗龍）免洗餐具第一批限制使用對象、實施方式及實施日期」公告

[Circular No. 0910025775 'The announcement of the first phase of regulation of plastic shopping bags and utensils'] (22 April 2002) <<https://mojlaw.moj.gov.tw/LawContentExShow.aspx?id=100100%2c%e6%b3%95%e8%a6%8f%e6%b1%ba%2c0910015942%2c20020425&type=E&kw=%e5%a1%91%e8%86%a0%e8%a2%8b&etype=etype5>>.

11 台灣環境資訊協會 [Environmental Information Association], 「生活大革命 - 限制使用塑膠袋塑膠餐具」 台灣環境新聞特刊 [Revolution in our daily life' Special issue of Taiwan environmental news] (Taipei, 2002) <<https://e-info.org.tw/news/taiwan/special/2002/taspr2002-02.htm>>.

12 The Environmental Protection Administration 「為何不管制或取消管制有店面餐飲業」 [Why the Regulation on Plastic Bag Toward Foodservice Retailers Was Revoked in 2006] (EPA website, 2019) <<https://hwms.epa.gov.tw/dispPageBox/onceOff/onceOffDetail.aspx?ddsPageID=EPATWH74&dbid=4357915398>>.

13 The Environmental Protection Administration, 「為何不管市場、夜市、攤販」 [Why Not Regulate the Use of Single-use Utensils for Street vendors and Stallholders in Night Markets] (EPA website, 2019) <<https://hwms.epa.gov.tw/dispPageBox/onceOff/onceOffDetail.aspx?ddsPageID=EPATWH74&dbid=4234515405>>.

14 The Environmental Protection Administration, '80 Per Cent Reduction in Plastic Bag Consumption Over Six Months' (2003) VI(7) Electronic Environmental Policy Monthly 4 <https://www.epa.gov.tw/isplayFile.aspx?FileID=FEbDA1F6339CF7_DD&P=67df7418-83b7-4ced-9754-0ade10f087db>.

15 Frank Convery, Simon McDonnell and Susana Ferreira, 'The Most Popular Tax in Europe? Lessons from the Irish Plastic Bags Levy' (2007) 38(1) Environmental and Resource Economics 1.

Nevertheless, there are numerous questions regarding the effectiveness of the policy. According to the statistics produced by the EPA from 2002 to 2018, in general, annually each Taiwanese person consumes 18 to 16.5 billion plastic bags, 3 billion plastic straws.¹⁶ On average, each Taiwanese person uses 780 plastic bags a year, equal to more than two plastic bags per day, and a plastic straws every three days.¹⁷ This implies the reliance on plastic products has not changed and the ‘success story’ of 2002 regulation is not as ‘brilliant’ as it looks like.¹⁸

There may be two instinctive answers to the phenomenon: one possibility is that the present regulation is not strong enough. The gap is unregulated objects such as the eateries and stalls in the night markets. The other is that it looks like the previous regulation has not successfully raised the environmental consciousness among the public to the level that alters wasteful consumerist habits.¹⁹ These reasons also constitute the underlying understanding that underpinned subsequent regulation of the EPA.

2.2 Post-2018 and Scaling up Ambition

The EPA has articulated a road map towards a circular economy in the Action Plan of Marine Debris Governance in Taiwan (hereinafter as ‘2018 plan’ or

‘2018 reform plan’).²⁰ The 2018 plan restricts plenty of plastics and encompasses numerous grace periods which will eventually lead to a blanket ban on the use of single-use plastic products in 2030. However, before 2030, the 2018 plan should be more accurately realised as a price regulation that prohibits giving out plastics for free rather than a behaviour regulation that bans the use of plastics.²¹ The 2018 plan has been initiated by reform measures that are in effect since 2018 (hereinafter as ‘2018 reform’), which is exactly a case of a price regulation in point.

2.2.1 Regulating Plastic Bags

The aim of the current stage of plastic bag reduction measures since 2018 is to make further restrictions on the use of plastic shopping bags to more target industries and wider scope of plastic products. In August 2017, the EPA announced the revised ‘Objects, Implementation Means and Effective Date of Restricting the Use of Plastic Shopping Bags’, which embracing additional seven major sources or categories of targets.²² This regulation comes into force from January 2018 and thus called 2018 reform.

The restriction on use of plastic bags now covers 14 targets of business categories. The new categories add 80,000 businesses to the previous 20,000 businesses already subject to the controls. With a total of 100,000 businesses now subject to the restrictions, it is expected that 1.5 billion fewer plastic bags will be used every year. Before 2018, the inspectors shall first give advisory

16 The Environmental Protection Administration, 「為什麼要管制」[‘Why We Regulate the Use of Single-use Plastic Straws’] (EPA website, 2019) <<https://hwm.s.e.p.a.gov.tw/DispPageBox/onceOff/onceOffDetail.aspx?ddsPageID=EPATWH101>>.

17 Li Bingfang, 「台灣人一年用165億個塑膠袋！地球日籲從生活減塑」民報 [‘Taiwanese Consume 16.5 Billion Plastic Bags Annually’ Taiwan People News] (Taipei, 22 March 2018) <<https://www.peoplenews.tw/news/a1df0d05-b243-4f88-93eb-d00f01747d9dt>>.

18 See Johane Dikgang, Anthony Leiman and Martine Visser, ‘Elasticity of Demand, Price and Time: Lessons from South Africa’s Plastic-bag Levy’ (2012) 44(26) Applied Economics 3339.

19 Qunfang Zhu, ‘An Appraisal and Analysis of the Law of “Plastic-Bag Ban”’ (2011) 5 Energy Procedia 2516, 2520.

20 The Environmental Protection Administration, ‘Action Plan of Marine Debris Governance in Taiwan’ (EPA website, 2019) <<https://www.epa.gov.tw/DisplayFile.aspx?FileID=C434A8EB6704AFC1&P=7e57ca93-38e7-47fe-896e-a0aa329ba447>>.

21 The Environmental Protection Administration, 「限制使用與禁止使用的差別」[‘2018 Reform is Not a Prohibitive Regulation’] (EPA website, 2018) <<https://hwm.s.e.p.a.gov.tw/DispPageBox/onceOff/onceOffDetail.aspx?ddsPageID=EPATWH74&id=4852915148>>.

22 The Environmental Protection Administration, 環署廢字第1060062219號函:修正「購物用塑膠袋限制使用」[Circular No. 1060062219: The proclamation of the amendment of the regulation against plastics shopping bags] (EPA website, 15 August 2017) <<https://hwm.s.e.p.a.gov.tw/DispPageBox/getFile/Get.aspx?FileLocation=PJ-EPATW%5cFiles%5c&FileName=1502.pdf>>.

warming to the disobedience, and ever since the first of January 2018, the EPA can fine the breach right away.

Furthermore, the EPA conceives a linear regulation road map (2018 plan) for the following twelve years to impose even broader regulation to more targets so as to achieve a continuously decline in the consumption of plastic products. Retail stores who issue uniform invoices are noticed that all disposable utensils, containers and plastic shopping bags free of charge will become unlawful in 2020. In 2025, surcharges for plastic shopping bags will become mandatory in all stores including conventional market and night market.²³ Finally, in 2030 a blanket ban will outlaw any one-off plastic shopping bag provided by the vendors in all stores, no matter it is for free or not.²⁴ According to the EPA, on average presently each Taiwanese uses more than 780 plastic bags annually. The EPA aims to reduce the number to four hundred by 2020, one hundred by 2025, and to zero by 2030.²⁵

2.2.2 Regulating Microbeads, Dining Utensils and Straws

The 'Ban on Manufacturing, Import, and Sale of Cosmetics and Personal Care Products Containing Microbeads' was announced in August 2017.²⁶ Six categories of products containing plastic microbeads smaller than 5 mm in diameter are banned from being manufactured or imported as of 1 January 2018. Sales of such products will be banned as of 1 July 2018.

In parallel to the restriction against single-use plastic shopping bag, the regulation on the single-use dining utensil has identical governing strategy, regulator structure and legal basis. It currently stipulates that food

Regulatory period	2002	2018	By 2020	By 2025	By 2030
Regulated business categories	7 categories of regulatory targets (about 20,000 stores)	Additional 7 categories (about 80,000 stores)	Stores issuing uniform invoices (about 100,000 stores)	Conventional market and night market added (about 300,000 stores)	Prohibition in all stores
Estimated amount of plastic bags reduction	Annual reduction from 20 billion to 18 billion (amount to 780 per capita)	Annual reduction from 18 billion to 16.5 billion (amount to 715 per capita)	Annual reduction from 16.5 billion to 9.5 billion (amount to 400 per capita)	Annual reduction from 9.5 billion to 2.5 billion (amount to 100 per capita)	Annual reduction from 2.5 billion to zero

Made by author

23 The Environmental Protection Administration, 'Action Plan of Marine Debris Governance in Taiwan' (n 20).

24 *ibid*.

25 卓冠齊 [Zhuo Guanqi], 「回收塑膠，真的再利用了嗎？」 [Do We Really Recycle the Plastics?] (Taiwan Public Television Service and Initium Media, 30 July 2018) <<https://theinitium.com/article/20180730taiwan-pts-plastic-recycle/>>.

26 The Environmental Protection Administration, 106.8.3. 環署廢字第 1060059207 號函:修正「限制含塑膠微限制含塑膠微粒之化妝品與個人清潔用品製造、輸入及販賣」公告 106.8.3 Circular No. 1060059207 The announcement of a regulation against manufacturing, Import, and Sale of Cosmetics and Personal Care Products Containing Microbeads' (EPA website, 3 August 2017) <[https://hwms.epa.gov.tw/dispPageBox/getFile/Get.aspx?FileLocation=PJ-EPA-TW %5cFiles%5c&FileName=1500.pdf](https://hwms.epa.gov.tw/dispPageBox/getFile/Get.aspx?FileLocation=PJ-EPA-TW%5cFiles%5c&FileName=1500.pdf)>.

and beverage service in government facilities, private schools, department stores/ shopping malls, wholesale stores, supermarkets, chain convenience stores, fast food chains, and food service retailers in store must not provide particular dining utensil required.²⁷ The EPA plans to restrict the free single-use dining utensil for in-store dining in 2020, and then expand the restriction to all food and beverage service stores regardless of dine-in or dine out in 2025. Eventually, the EPA will prohibit the employment of all single-use dining utensil in all stores in 2030.²⁸

The regulation on the usage of plastic straws has been on the stage from 1 July 2019.²⁹ The regulation stipulates that public sector entities, public and private schools, department stores and shopping malls, chain restaurants are prohibited from providing free single-use straws for customers dining in-store. These four sectors affect

around 8,000 business in total.³⁰ The EPA plans to expand the prohibition on plastic straws to include all Retail stores in the food and beverage industry (dining outlets) in 2020 and to both dine-in and take-out customers by 2025.³¹ The end goal for the EPA is a complete ban by 2030.

Altogether, the 2018 plan on plastic bags, microbeads, dining utensil, and plastic straws is expected to constitute one of the most extensive bans on plastic in the world. Numerous regulations build on existing measures and will be phased in over time. Dining outlets will be fined for providing free plastic bags, disposable food containers, and utensils for dine-in consumers in 2020. Customers will have to pay extra for all straws, plastic shopping bags, disposable utensils and beverage cups even when taking out from 2025, ahead of a full ban on all the single-use items five years later. That is, these measures will culminate in a blanket ban on single-use plastic bags, utensils (including cutlery and containers), straws and beverage cups in 2030.³²

27 The Environmental Protection Administration, 95.6.9.

環署廢字第 0950044991 號函:「免洗餐具限制使用

對象、實施方式及實施日期」公告 [‘The Announcement of a Regulation Against Single-use Dining Utensil’] (EPA website, 9 June 2006) <<https://hwms.epa.gov.tw/dispPageBox/getFile/Get.aspx?FileLocation=PJ-EPATW%5cFiles%5c&FileName=1499.pdf>>; The Environmental Protection Administration, 108.8.8.

環署廢字第 [‘108.8.8 Circular No. 1080056916

號函:「免洗餐具限制使用對象及實施方式」公告

The Announcement of a New Regulation Against Single-use Dining Utensil’] (EPA website, 8 August 2019) <<https://hwms.epa.gov.tw/dispPageBox/getFile/Get.aspx?FileLocation=PJ-EPATW%5cFiles%5c&FileName=1934.pdf>>.

28 The Environmental Protection Administration, ‘Action Plan of Marine Debris Governance in Taiwan’ (n 20).

29 The Environmental Protection Administration, 108.5.8. 環署廢字第1080031442號函:「一次用塑膠吸管限制使用對象及實施方式」公告 [‘108.5.8 Circular No. 1080031442 The Announcement of the Regulation Against Single-use Plastic Straws’] (EPA website, 8 May 2019) <<https://hwms.epa.gov.tw/dispPageBox/getFile/Get.aspx?FileLocation=PJ-EPATW%5cFiles%5c&FileName=1721.pdf>>.

3

A CRITICAL REVIEW OF TAIWAN’S REGULATORY PROCESSES AND FAILURES

This section raises criticisms related to four layers of ambiguities within the normative content and policy-making procedure of 2018 reform and 2018 plan. These ambiguities have contributed to the ambivalence in regulatory rationales and social attitude.

30 The Environmental Protection Administration, 「管制的效益」[‘The Benefit of the Regulation’] (EPA website, 2019) <<https://hwms.epa.gov.tw/dispPageBox/onceOff/onceOffDetail.aspx?ddsPageID=EPATWH104&dbid=4111118712>>.

31 The Environmental Protection Administration, ‘Action Plan of Marine Debris Governance in Taiwan’ (n 20).

32 Richard J Kish, ‘Using Legislation to Reduce One Time Plastic Bag Usage’ (2018) 38(2) Economic Affairs 224.

3.1 Legal Norms and Social Change: Ambiguity on Regulatory Strategy

As discussed, the 2002 regulation was not the success it seemed to be at first glance. However, the 2018 plan still attempts to learn from this 'failure'. The question then is are the lessons it draws upon problematic. Taiwan's latest wave of regulatory plans launched in 2018 sticks to the same regulatory logic or strategy, which asserts that to impose a wider regulation and thus to raise more eco-awareness will be the key to a successful plastics reform.³³ The 2018 reform plan is based on two assumed lessons from the 2002 regulation. The first assumption is that the 2002 regulation failed to successfully raise the eco-awareness in the society. Therefore, one of the major targets of the 2018 plan lies on awaking the public to the significance of plastic issue.³⁴ Secondly, regarding the relation between legal norms and social change, strict regulations are seen as essential instrument to wake public concern on this issue.

The following sections, however, will argue that these assumptions as well as regulatory strategy are problematic in many ways. The 2018 plan built upon might neglect the real issue and therefore render people difficult to be positive to the future of this 2018 plan. The contradictions can be seen on different levels. On the one hand, the EPA asserts that before the living

habits of the public are evidently changed and the executive capacity of the regulatory entity improved, it is not appropriate to make coercive regulation.³⁵ As the EPA seeks to justify its indolence in the recent sixteen years, it must hold that legal norm barely change social custom and culture. However, the legislative reason of the 2018 plan clearly states a different philosophy. It states that one of the major aims of the regulation is to change people's living habit, which implies to some extent it has the potential to change consumer behaviour in an obvious or subtle way.³⁶ It seems to suggest though the law requires social grounds, social foundation is not something that is pre-existing or fixed that can be drawn upon before regulation. Accordingly, rather than waiting for such a social foundation (for awareness around plastic waste), the law should actively trigger social change.

While it took sixteen years, between 2002 and 2018, to reduce 2 billion bags, the new targets aim for a 1.5 billion reductions in plastic bag use in two years (from 2018 to 2020) and another 16.5 billion bags in ten years (from 2020 to 2030). On the one hand, if regulators actually believe social change can be made at least to certain extent by means of regulation or 'nudging', the regulator cannot justify why EPA procrastinate for sixteen years to take effective measures to respond the local context. It is worth analysing what the real reasons for this procrastination could be and what the impacts of it have been.

33 行政院 [The Executive Yuan],

「推動循環經濟—創造經濟與環保雙贏」

['To Promote Circular Economy'] (Executive Yuan website, 2018) <<https://www.ey.gov.tw/Page/5A8A0CB5B41DA11E/f8d89849-e4f1-41e7-86ec-8fa9c2b496a9>>; Kathryn Willis and others, 'How Successful are Waste Abatement Campaigns and Government Policies at Reducing Plastic Waste into the Marine Environment?' (2018) 96 Marine Policy 243, 246.

34 The Environmental Protection Administration, 「為什麼要推動購物用塑膠袋限制使用政策」 ['The Rationale of the Plastic Bag Regulation'] (EPA website, 2019) <<https://hwms.epa.gov.tw/DispPageBox/onceOff/onceOffDetail.aspx?ddsPageID=EPATWH74&dbid=4616115067>>.

35 The Environmental Protection Administration,

「本次修正公告無法全面禁用購物用塑膠袋原因」

['The Reason Why a Complete Ban on Plastic Bag is Impractical'] (EPA website, 2019) <<https://hwms.epa.gov.tw/DispPageBox/onceOff/onceOffDetail.aspx?ddsPageID=EPATWH74&dbid=4739515150>>; The Environmental Protection Administration,

「限制使用與禁止使用的差別」 [Difference Between Restriction Measures and Complete Bans'] (EPA website, 2019) <<https://hwms.epa.gov.tw/DispPageBox/onceOff/onceOffDetail.aspx?ddsPageID=EPATWH74&dbid=4852915148>>.

36 The Environmental Protection Administration, '80 Per Cent Reduction in Plastic Bag Consumption Over Six Months (n 14).

On the other hand, regulator may believe that years of patiently waiting for the ‘peak conditions’ for social acceptability of such a regulation and perfectly suitable timing are indispensable.³⁷ If the conditions are eventually mature for taking actions after years of patience, it is not clear why the EPA has taken a relatively small step in 2018 and includes one grace period after another to meet the 2030 target. On the contrary, if the existence of social awareness is still factually thin after sixteen years of patience, so that only piecemeal reform could be seen as appropriate, why, from 2020, is there confidence that Taiwanese society will rapidly foster sufficient awareness or consciousness to bear a massive reduction in consuming plastic waste, that is a more than tenfold reduction from current use? Accordingly, it is worth inquiry what the social change the EPA is currently expecting that can produce this reform.

3.2 Is a Lack of Eco-awareness the Issue?

One assumption of 2018 plan may be that Taiwanese society has not fully embraced environmental concerns, thus regulation was not possible between 2002 and 2018. However, it seems difficult to explain why, since 2002, every poll regarding regulation against single-used plastic bags and products suggests strong support for the 2002 regulation on plastic bags.³⁸ Furthermore, even though the more stringent and comprehensive reforms in 2018 generate some debate, overall the polls shows that these reforms are still widely accepted.³⁹

Thus, it seems unreasonable to claim that the lack of public willingness towards reducing plastic waste as an excuse of ineffectiveness of 2002 regulation and the EPA’s sixteen years of nonaction since then.

The regulators may argue that these polls do not reflect the full reality; in a sense, they are right. It might be due to a kind of public mind-set call ‘yeah-but’, which suggests despite the public fully aware and support environmental regulation, they may still perform oppositely due to numerous individual reasons such as inconvenience or costliness.⁴⁰ That is, public awareness cannot be simplified as yes or no; it is a more complicated, flexible and ambiguous existence and extremely difficult to identify. It will be extremely challenge to justify how to and who can prove its existence? Therefore, it may not be independently a solid ground for transition. If the regulatory strategy is set on this, it will inevitably be at a loss. Conversely, the regulatory failure should not be blamed solely on shortage of public awareness as well.

3.3 Broader Regulation as the Cure: Ambiguity in Identifying Regulatory Black Holes

Whether the 2018 reform plan could be categorised as pure command and control model is questionable. As stated above, the second presumption the 2018 plan hold is the 2002 regulation did not alter the trend of the plastic consumption, because it is not strict enough to make the change. Since the EPA’s report asserts that the 2002 regulation had been fully implemented,⁴¹ it seems that the scope of the 2002 regulation was not wide enough and that is responsible for the ineffectiveness. More specifically, the 2002 regulation does not completely cover all the ‘users’, including

37 Irina Safitri Zen, ‘Nudge to Promote Sustainable Shopping Lifestyle’ (2018) 2(22) Multidisciplinary Digital Publishing Institute Proceedings 1394.

38 The Environmental Protection Administration, ‘80 Per Cent Reduction in Plastic Bag Consumption Over Six Months (n 14); 本報訊 [The Editors],

「環保署宣導限用塑膠袋」 [‘The EPA Promotes the Regulation Toward Plastic Bags’] (The Epoch Times, 31 March 2002) <<http://www.epochtimes.com/b5/2/3/31/n180424.htm>>.

39 The Environmental Protection Administration, ‘Plastic-Free Ocean Promoted in Response to International Trend’ (2018) XXI(1) Electronic Environmental Policy Monthly 2 <<https://www.epa.gov.tw/DisplayFile.aspx?FileID=16703F059B4FE0AA&P=73c54458-066d-4aa2-91f1-0d7f1f7358ad>>.

40 Anne Lane, ‘How the ‘yeah-but’ Mentality Stalls Progress on Bag Bans and Other Green Issues’ (The Conversation, 23 July 2018) <<https://theconversation.com/how-the-yeah-but-mentality-stalls-progress-on-bag-bans-and-other-green-issues-100330>>.

41 The Environmental Protection Administration, ‘80 Per Cent Reduction in Plastic Bag Consumption Over Six Months (n 14).

producers and vendors, givers and taker, of numerous sorts of plastic products. As such, the 2018 reform plan responds to this by trying to broaden the scope of the 2002 regulation.

Before examining how the scope would be extended, it is important to consider the findings of the EPA's account on the 2002 regulation.⁴² The EPA claimed a drop of 2 billion pieces in disposable plastic bag annually.⁴³ Roughly speaking, 2 billion pieces equals a reduction of 10 thousand tons of plastic bags. This conversion ratio is essential in further analysis. Interestingly, the Department of Statistics, the Ministry of Economic Affairs reports that the annual sell of all sorts of plastic bags in Taiwan's domestic market range from 126 to 171 thousand tons.⁴⁴ In comparison to EPA's numbers, there is an obvious gap varying from 116 to 161 thousand tons of plastic bags need to be regulated to achieve the zero-plastics mission. Maybe we can roughly say the real challenge is many, let's say ten, times bigger than resolved part in 2002 reform. It left an intractable puzzle for the 2018 plan to puzzle out.

The 2018 reforms affect four times more stores (around eighty thousand stores) than that of 2002 regulation, but only smaller amount of reduction of 1.5 billion plastic bag has been created (about 7.5 thousand tons) by 2020. Parts of the 2018 plan's main targets, the conventional market and night market, are estimated to consume 7 billion plastic bags, and around 35

thousand tons each year according to the conversion ratio. Nevertheless, adding up the contributions of four regulatory periods conceived in the 2018 plan, by 2030 altogether there will be a reduction of 100 thousand tons of plastic bags. That is, in comparison with the data from the Department of Statistics, still 26 to 71 thousand tons are missing and unregulated. It appears that even in 2018 plan there is a still regulatory blackhole has been untracked and not been fully explored, which makes to assess if the target of comprehensively restricting plastic bags is achieved impossible.

In addition, people get used to finding alternative plastics or materials to evade the regulation. The apparent reduction is factually a trade-off to other categories of the balance sheet. The response from the market to the regulation is to offer alternative options of plastic or hybrid product that are popular with consumers and beyond the regulation. For instance, so-called more environment-friendly shopping bags made of non-woven material is unregulated in 2018 plan. However, it is still a plastic product and can produce the same environmental issues if they are not fully reused. That is, the existing consumerist economy can easily find the way to bypass or counteract the regulation and offer more options of plastic products. It may lead to a ridiculous scenario in consequence: the stricter the regulation is, the more flourishing the plastic industries are. These points are further discussed, in the context of more meaningful broader changes, in Section Five.

A further point can be made regarding the empirical evidence that underpin the regulator's claims. Are there sufficient investigations or researches made preceding the reform? What is their methodology? Can the regulator explain where these schedules and targeting figures are coming from? Is it a plan made behind the closed door? Most importantly, balancing of different interests cannot be made in a tick box exercise. It is of importance for any policy-making to be set on the empirical foundation of reason and to reveal its evaluation of values, which are essential to the legitimacy of policy under discussion. Unfortunately, official documents concerning the policy making process are not transparent in providing answers to these questions. Quite opposite, these contradictions, inconsistency, disconnection between measures, actions and words, and non-transparency in policy

42 Note – there is no single review here, rather a compilation of documents referred to by the author.

43 The Environmental Protection Administration, 107.7.12 環署廢字第 1070055055 號函 [Communication from the Environmental Protection Administration to the Control Yuan No. 1070055055].

44 The Environmental Protection Administration, 107.7.10 經授工字第 10720419360 號函 [Communication from the Ministry of Economic Affairs to the Control Yuan No. 10720419360].

unpreventably raise concern to the ambivalence in the regulation.⁴⁵

3.4 Ambivalence in Regulatory Rationales and Social Attitude

To sum up above discussions, we may now revisit lessons from the regulatory failure of 2002 regulation and the stumbling process since then. As stated, currently Taiwan annually consumes 1.8 billion single-use plastic bags, which is four times more than that in EU. From this perspective Taiwan's plastic regulation is hardly a success as claimed. In fact, research in other areas of environmental regulation has demonstrated similar challenge to disconnect between a strong set of binding legal provisions and slow progress towards the situation on the ground.⁴⁶ This research points out the ambivalence within regulator's mind is a more precise reason to the source of the regulatory failure than the lack of social awareness and insufficiency in regulation. As a result, despite the formally full compliance, the factual 'noncompliance' (different from feign compliance) make the usage of plastic bag remain popular. In order to cope with this ambivalence, the next section will begin with exploring the origin of it.

4

DIAGNOSING THE CAUSE AND EFFECT OF REGULATORY AMBIVALENCE

The ambivalence in both public and private sector and the consequent circumvention of the law owes to the lack of a sincere drive or whole-hearted motivation based on substance local need. Obviously, this difficulty cannot be solved simply through broader regulation or awareness. However, with a real drive missing, it jeopardises the chance of success for the 2018 plan. This section explores the fundamental reasons for that ambivalence and the actual drive to the 2018 plan and its impacts.

4.1 Pursuing 'International' Benchmarks

In a global era, domestic regulations, to some extent, can have transnational effects particularly where those regulations are in the fields of global nature (such as climate change governance). In other words, state agencies are also affected by the international socio-cultural structure by means of international value-orientation, trend, pressure, and competition.⁴⁷ Taiwan is no exception. For instance, the press release of the 2018 reform plan reflects these interactions outright.⁴⁸ Other than being the relay to expand the plastic ban that has been running for sixteen years, it clearly frames it as a response to international trend and labels the 2018 reform plan as a promotion of 'Plastic-Free Ocean'.⁴⁹

⁴⁵ 吳欣紘、陳妍君、黃旭昇、李怡瑩、李郁欣 [Wu Xinyi, Chen Yujun, Huang Xusheng, Li Yiyi, Li Yuxin], 限塑16年我們改變了什麼?」[What Have We Changed in the 16 years of Plastic Regulations] (The Central News Agency, 30 July 2018) <<https://www.cna.com.tw/project/20180730-Plastic/>>; 黃靖軒 [Huang Jingxuan],

「臺灣新限塑政策起跑半年，成效如何？」

「What are the Effects of the Taiwan's New Plastics Regulations?」(National Geographic, 22 June 2018) <<https://www.natgeomedia.com/environment/article/content-3047.html>>.

⁴⁶ See for example, in relation to sanitation: Philippe Cullet, 'Policy as Law: Lessons from Sanitation Interventions in Rural India' (2018) 54 Stanford Journal of International Law 241-258, 243.

⁴⁷ Riley EJ Schnurr and others, 'Reducing Marine Pollution from Single-use Plastics (SUPs): A Review' (2018) 137 Marine pollution Bulletin 157, 158.

⁴⁸ The Environmental Protection Administration, 'Plastic-Free Ocean Promoted in Response to International Trend' (n 39).

⁴⁹ The Environmental Protection Administration,

「為什麼要推動購物用塑膠袋限制使用政策」[The Rationale of the Plastic Bag Regulation] (n 34).

Since restricted use of plastics is a major global environmental trend, Taiwan's stringent regulation and seemingly ambitious target is welcomed by observers. Not surprisingly, these regulatory measures earn applause from international media and environmental groups. Their positive feedbacks surely lend support to those measures. Notwithstanding that, Taiwan's case reveals that this positive feedback loop may not always be positive to the regulatory target.

4.1.1 Drawing Solely From the Global North

The first notable phenomena in the deliberative process of the 2018 reform plan lies in that it did not thoroughly look at existing experiences and advanced legislature in other jurisprudences with similar background conditions. To be more precisely, the EPA did not draw lessons from the existing advanced legislature cases in Asia & Africa countries such as Bangladesh,⁵⁰ South Africa,⁵¹ or Kenya.⁵² The regulator ignored developments in developing Asian and African countries, even though it is obvious that in terms of restriction on single-used plastic product, developing countries are usually the forerunner and adopted more ambitious measures.⁵³ Any ensuing regulation can choose diverse path, but it stands on no ground to neglect previous achievements and experiences.

There is no doubt that benchmarks and mutual learning are essential to international interactions and

improvement. The problem is, to the EPA, it seems that lessons can only be learned from economically developed countries, which suggests the benchmarks are defined by economic development rather than substantive performance in environmental sustainability.

On the contrary, despite the Taiwanese initiative sixteen years ago and a great number of plastic regulations that have been applied all over the world in last decades, the timing for the EPA to revisit plastics regulation and prioritize 'plastic-free oceans' as a major focus perfectly coincides with the agenda set by the developed countries such as those in the EU or the so called 'global trend'. According to the EPA this is not a coincidence. However, while providing momentum to the sluggishness in terms of regulation, this 'global' trend may also divert the regulatory goal from the right track.

4.1.2 Learning Lessons or Seeking Global Acknowledgement: Questioning the Motivation Behind the Regulation

Since there is no compulsory enforcement to rely on, the way international socio-cultural structure affects state agency is through social, political pressure and involve some sort of politics. A case in point is the dispute dubbed 'straw war' regarding which side of the (English) Channel is one step ahead on measures regarding single-use plastics and who is the follower aligning with the benchmark set by the leader.⁵⁴ After European parliament voted, the environment commissioner, Karmenu Vella, stated that 'Europe is ready to ... lead international efforts to make our oceans plastic-free'.⁵⁵

In the case of Taiwan, because of its unique position in the international community and the difficulty in

50 Alice R Baker, 'Fees on Plastic Bags: Altering Consumer Behaviour by Taxing Environmentally Damaging Choices' (Expresso) <http://works.bepress.com/alice_baker/1>.

51 Johane Dikgang, Anthony Leiman and Martine Visser, 'Analysis of the Plastic-Bag Levy in South Africa' (2012) 66 Resources, Conservation and Recycling 59; Johane Dikgang, Anthony Leiman and Martine Visser (n 18) 3339.

52 Jeremia Njeru, 'The Urban Political Ecology of Plastic Bag Waste Problem in Nairobi, Kenya' (2006) 37(6) Geoforum 1046; John Kariuki Njuguna, 'The Efficacy of the Ban on Use of Plastic Bags in Kenya' (2018) Journal of Conflict Management and Sustainable Development 91.

53 Doris Knoblauch, Linda Mederake and Ulf Stein, 'Developing Countries in the Lead—What Drives the Diffusion of Plastic Bag Policies?' (2018) 10(6) Sustainability 1, 3.

54 Arthur Neslen, 'European Parliament Approves Sweeping Ban on Single-Use Plastics' The Guardian (24 October 2018) <<https://www.theguardian.com/environment/2018/oct/24/european-parliament-approves-ban-on-single-use-plastics-uk-eu-brexite>>.

55 European Commission, 'Press Release', EC Daily News (25 October 2018) <http://europa.eu/rapid/press-release_MEX-18-6206_en.htm>.

participating in international regimes, international acknowledgement, recognition, even national identity and glory are much valued. For these reasons, Taiwan is usually sensitive to the agenda set by UN, US and European countries as well as their sentiments. The 2018 reform plan can serve as a vivid example. While officially announcing that microbeads will be prohibited across the island as of the beginning of 2018, the EPA highlights that by doing so Taiwan now could be in sync with developed countries.⁵⁶ Taiwan further stressed that associated countermeasures had received applause from delegates of other countries.⁵⁷ The official website of the EPA even deliberately list relevant positive feedbacks and applauses received from international community and media.⁵⁸ It is worth of thinking what are the diverse implications it will bring if the EPA, in comparisons, demonstrates the municipal communities, sectors, and, reasons that are pro and con these 2018 reform plan.

4.2 Potential Consequences of Regulating Without a Grassroots Approach

To be clear, to take regulatory action under the consideration of international pressure is not a bad thing. The problem is, on condition that the motivation behind these regulations is out of external drive instead of sincere practical concerns from the root, will its policy-making procedure and institutional designs be adversely distorted? Will the regulation possibly draw upon local

resources, cope with domestic negative factors and concerns, and bring about fundamental transformation on the ground? Furthermore, as this 2018 reform plan becomes part of the national propaganda, will this big show be reduced to victim of opportunism when the focus of pressure or spotlight has shifted?

4.2.1 Insufficient Empirical Understandings

When the rationale of a regulation or institutional transplantation is misplaced or coming out of irrelevant or indirect concerns, it will generate defects in policy-making procedure. In such cases, the most efficient and convenient way to hit the regulatory target is to follow the agenda and transplant similar regulation or borrow their measures from other jurisdictions without comprehensive investigation into domestic contexts and conditions. The regulator may not even bother to find the factually best practice to copy from, because regarding the aim of seeking for acknowledgement and recognition, what really important, at the end of the day, is the 'brand name' or the symbolic implication of the 'product' instead of its suitability or quality. Looking back to the policy-making procedure of the 2018 reform plan, there seems hardly any empirical surveys or research to justify the plan. The official documents do not offer scientific evidences to explain the regulatory scope, content, schedule, and way of compliance. Nevertheless, further research could explore this policy making procedure through interviews to verify this cognition. If this is indeed the case, it is by far the ideal way of enacting legal regulation.⁵⁹

In addition, post facto investigation is an essential to verify the compliance and to adjust future regulation. Unfortunately, from the published data, it seems the EPA had not systematically and actively kept track of the compliance of the 2002 regulation; instead it depends on the manufacturers, importers and vendors to provide the data, including the variation on consumers' behaviour and the reduction amounts of

56 The Environmental Protection Administration, 'Plastic-Free Ocean Promoted in Response to International Trend' (n 39).

57 The Environmental Protection Administration, 「塑膠3R策略與創新:環保署力推塑膠循環經濟」[3R Plastic Strategy and Innovations]The EPA is Dealing with Plastic in a Circular Economy' (EPA website, 25 September 2017) <https://enews.epa.gov.tw/enews/fact_NewsPrint.asp?InputTime=1060925155515>.

58 The Environmental Protection Administration, 「我國限塑政策國際相關報導」[International Reports on Taiwan's Plastic Regulation] (EPA website, 2018) < <https://www.epa.gov.tw/SWM/D409BC765D94324> >.

59 Dirk Xanthos and Tony R Walker, 'International Policies to Reduce Plastic Marine Pollution from Single-Use Plastics (Plastic Bags and Microbeads): A Review' (2017) 118 (1-2) Marine Pollution Bulletin 17, 21.

plastic bags to assess the effectiveness of the regulation.⁶⁰ The 2018 reform plans follow the same route and impose each regulatory subject obligations for self-surveillance.⁶¹ The EPA will only dispatch personnel to collect the reported statistics number quarterly, and basically there is no check to verify the correctness of the numbers.⁶² People may cynically predict that all, or at least most of, the regulatory subject will claim a full compliance of the regulation, and the EPA will have a noticeable transcript to advertise for internationally, while the substantive situation remains.

4.2.2 A lack of Coherent Regulatory Strategy

There are several consequences from the defects in policy-making processes. First, without appropriate

investigations and research, the substance of the regulation will unavoidably be unsound. This is because it will be detached from local problems and factors originated from different social backgrounds, contexts and priorities, and development goals. In addition, it definitely will fail to look into diverse concerns from different policy fields and social classes within peculiar domain and not to mention to balance interest of difference.

The EPA itself is fully aware that different countries have different ways of controlling plastics, in that each of them has its own context and peculiar factors, which is different from other states.⁶³ Nevertheless, looking back to the 2018 reform plan, the regulator does not mention too much factual investigation into local conditions. Hence, it is also not evident to what extent the EPA draws upon local resources and tackle local concerns.

However, the Head of the Department of Waste Management, Ms. Ying-Ying Lai, once stated that the living habit and conditions of Taiwan is utterly alien from those in Europe and North America. She states that 'The diet mostly contains hot soup and the weather is usually humid and rainy, these factors make people get used to require more plastic bags than that in the EU'.⁶⁴ It wouldn't be surprising that there are numerous inquiries raised against this statement. For one thing, there are also local societal and cultural factors that are supportive to the regulation on single-used plastics. For example, Taiwanese traditional culture that

60 The Environmental Protection Administration, 106.8.15.

環署廢字第 1060062219 號函:修正「購物用塑膠袋限制使用對象、實施方式及實施日期」公告三、(二) [106.8.15 Circular No. 1060062219 'The proclamation of the amendment of the regulation against plastics shopping bags'](EPA website, 2017) <<https://hwms.epa.gov.tw/dispPageBox/getFile/Get.aspx?FileLocation=PJ-EPATW%5cFiles%5c&FileName=1502.pdf>>; The Environmental Protection Administration, 「要請業者配合的事情」[The Business's Must Do] (The EPA website, 2019) <<https://hwms.epa.gov.tw/dispPageBox/onceOff/onceOffDetail.aspx?ddsPageID=EPATWH74&dbid=4234515405>>.

61 The Environmental Protection Administration, 106.8.15.

環署廢字第 1060062219 號函:修正「購物用塑膠袋限制使用對象、實施方式及實施日期」公告三、(二) N0(EN) [106.8.15 Circular No. 1060062219 The proclamation of the amendment of the regulation against plastics shopping bags'](EPA website, 2017) <<https://hwms.epa.gov.tw/dispPageBox/getFile/Get.aspx?FileLocation=PJ-EPATW%5cFiles%5c&FileName=1502.pdf>>.

62 The Environmental Protection Administration, 「相關法規」[Related Regulations] (EPA website, 2019) <<https://hwms.epa.gov.tw/dispPageBox/onceOff/onceOffList.aspx?ddsPageID=EPATWH4>>.

63 The Environmental Protection Administration,

「為何不管制或取消管制有店面餐飲業」

[Why the Regulation on Plastic Bag Toward Foodservice Retailers was Revoked in 2006] (n 12).

64 The Environmental Protection Administration,

「問與答」[Q&A] (EPA website, 2019) <<https://hwms.epa.gov.tw/dispPageBox/onceOff/onceOffDetail.aspx?ddsPageID=EPATWH74&dbid=4357915398>>; 黃靖軒 [Huang Jingxuan], 「臺灣新限塑政策起跑半年, 成效如何?」

[What are the Effects of the Taiwan's New Plastics Regulations?] (n 45).

encourages frugal lifestyle and three R (Repair, Reuse, Recycle) may explain the social support to these plastic regulations despite all these inconveniences.⁶⁵ Also, it does not take advantage of Taiwan's industrial and technical strong suit in separate collection and recycling circuit while making the 2018 reform plan. In sum, there is a need for field research and investigation by the regulator, looking at local resources, rather than the current approach that has tended to use local factors as excuses for inaction.

5

CALLING FOR FUNDAMENTAL (BOTTOM UP) REFORMS TO THE GLOBAL PLASTIC INDUSTRY

There are several consequences from the defects in policy-making processes. First, without appropriate investigations and research, the substance of the regulation will unavoidably be unsound. This is because it will be detached from local problems and factors originated from different social backgrounds, contexts and priorities, and development goals. In addition, it definitely will fail to look into diverse concerns from different policy fields and social classes within peculiar domain and not to mention to balance interest of difference.

The EPA itself is fully aware that different countries have different ways of controlling plastics, in that each of them has its own context and peculiar factors, which is different from other states.⁶⁶ Nevertheless, looking back to the 2018 reform plan, the regulator does not mention too much factual investigation into local conditions. Hence, it is also not evident to what extent

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5.1 The Control Yuan's Official Investigation and Corrective Measures

In 2018 the Control Yuan launched an official investigation into the work of the EPA regarding its

65 See also: J. Thøgersen, 'Frugal or Green? Basic Drivers of Energy Saving in European Households' (2018) 197 *Journal of Cleaner Production* 1521.

66 The Environmental Protection Administration,

「為何不管制或取消管制有店面餐飲業」[‘Why the Regulation on Plastic Bag Toward Foodservice Retailers was Revoked in 2006’] (n 12).

67 The Environmental Protection Administration, 「問與答」[‘Q&A’] (EPA website, 2019) <<https://hwms.epa.gov.tw/dispPageBox/onceOff/onceOffDetail.aspx?ddsPageID=EPATWH74&dbid=4357915398>>; 黃靖軒 [Huang Jingxuan],

「臺灣新限塑政策起跑半年，成效如何？」

[‘What are the Effects of the Taiwan's New Plastics Regulations?’] (n 45).

68 See also: Thøgersen (n 65) 1521.

plastic reform.⁶⁹ This investigation sets the ground for the sequential case against EPA's measures and policy-making procedure. The Control Yuan eventually proposed Corrective Measures to the EPA and the Executive Yuan for improvement in 13 May, 2019.⁷⁰ It is a forceful legal action with constitutional weight against the government, as according to the Constitution, the Executive Yuan (the government) and related subordinate organs (in this case the EPA) shall accepted this Corrective Measures and make improvement accordingly or take other actions immediately, and reply to the Control Yuan in writing in two months to see if the improvement is satisfactory.

These papers in short condemn the EPA's procrastination and reluctance in taking actions and failure in building up effective recycle system and circular economy. Overall, the Corrective Measures conclude that the plastics restriction policy has been detached from the policy aim of circular plastics economy.⁷¹ The report points out that on the side of producer, despite the first stage of plastics regulation launched in 2002, the EPA falls through in making appropriate institutional design and legal arrangement to encourage the plastic industries to make industrial transformation. Accordingly, the plastic industry remains the status quo. In consequence, the recycle industries have no intention to collect, segregate and process plastics waste, especially when the government only subsidizes very limited sorts of plastics waste. As a result, the production of plastic bags in recent decade even increases, while the usage of recycled materials remains extremely low.

On the consumers' side, even though the recycling has been carry out seriously, the high usage of plastic bags in recent decade is still a normality. As consumers believe that such waste have been or will be recycled, people seems to be at ease to use even more plastics. But the reality is, at least in most of the cases, people made arduous effort in recycling only to find that the recycled plastics are factually treated as general waste. This claimed recycling is at most a garbage sorting, for the materials are not reused. It is not difficult to see why the Control Yuan came to the conclusion that the circular plastics economy claimed by the EPA is basically an illusion, as underlie the disguise of propaganda is the remaining unsustainable economic mode that features unrestricted exploitation, production and consumption.

Although the Control Yuan's report criticizes the EPA's measures against the plastics by far, it may not explicitly object the 2018 plan. Nonetheless, since the 2018 plan follows the path of the 2002 regulation and similarly avoid transformation in fundamental economic structure, it is difficult to deflect the same criticism for the 2018 plan.

5.2 Building a Bottom Up Circular Economy

The Control Yuan entrenches circular economy as the policy goal of the plastics regulation and made criticisms accordingly. The EPA also see the 'circular economy' as its intended aim.⁷² However, the evaluation of the plastics regulation from the Control Yuan reveals a number of gaps and challenges that will spark more debates over the notion of circular economy. Accordingly, this section stresses the theoretical ground of the Control Yuan's architecture and therefore illustrate in what sense the EPA's vision or version of

69 監察院 [The Control Yuan], 「調查報告」 [Official Investigations Report] (Control Yuan website, 13 May 2019) 108 財調 0027 <<https://cybsbox.cy.gov.tw/CYBSBoxSSL/edoc/download/27292>>.

70 監察院 [The Control Yuan], 「監察成果」 [Attainment of the Control Yuan] (Control Yuan website, 13 May 2019) <<https://www.cy.gov.tw/sp.asp?xdURL=/di/RSS/detail.asp&ctNode=871&mp=1&no=6547>>; 監察院 [The Control Yuan], 「糾正案文」 [Corrective Measures] (Control Yuan website, 13 May 2019) 108 財正 0013 <<https://cybsbox.cy.gov.tw/CYBSBoxSSL/edoc/download/27293>>.

71 *ibid.*

72 The Environmental Protection Administration,

「我主辦永續物料國際研討會暨工作會議-推展循環經濟成果」 [The 5th International Conference on Sustainable Materials Management] (Environmental policy monthly, December 2018) 3 <<https://www.epa.gov.tw/DisplayFile.aspx?FileID=23EBF40CF1BD6BA8&P=2eb27ce6-1a6b-4600-8010-72ec8cf4c113>>; The Environmental Protection Administration, 「循環經濟」 [Circular Economy] (EPA website, 19 April 2019) <<https://www.epa.gov.tw/Page/3CC3DE65CAA48921>>.

circular economy is defective and in what way it should be reconsidered.

To relocate and redirect circular economy, the primary step is to find the guiding values or goal of circular economy. For example, under international policy the Sustainable Development Goals (SDGs), in particular SDG12, should be the primary policy goal for the operation of circular economy toward a genuine sustainability.⁷³ Furthermore, there is a need for the regulator to make comprehensive empirical research before proposing single-use plastic products regulation under sustainable development approach and circular economy model.⁷⁴

The main ideas of the SDG 12 (incorporating sustainable production and consumption) and circular economy are widely admitted as a mutual reinforcement of each other.⁷⁵ Furthermore, the SDG 12.5 clearly states that 'By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse'.⁷⁶ The 12.C further demands to 'Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, ..., including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts ...'.⁷⁷ This suggests that

the SDG 12 is expecting to see a circular plastics economy that is not activated by distorted subsidies but on the base of a restructured taxation.

As a starting point, in Taiwan there will be little disagreement to require more comprehensive regulation against plastics. The results of polls indicate that Taiwan society is expecting functional measures to handle plastics issues, but also in an efficient way. However, as the above discussions have illustrated, incomplete and piecemeal regulations against diverse forms of plastics and products is insufficient. Differentiation in different form of dining industries and grace period between drink or food service, dining-in or take-out are also widely seen as unnecessary. These complex institutional designs are not welcomed because they do no good for better compliance; on the contrary, they become detrimental to the reform, in that it generates more costs to advocate, understand, and comply with the ban.⁷⁸ If the regulator has made localized investigations and sufficient communications in the policy-making process, these obstacles can absolutely be removed.

For similar reason from previous experiences and discussions, it seems both legal regulation and social awareness alone are not enough to play that pivot role. Even the EPA, as regulator, did not buy into a simple 'command and control' logic that regulatory measures alone can alter the social structure. Also, the actions that Taiwanese people are looking for is not only to perform a gesture of goodwill or a superficial propaganda with educative implications.

Accordingly, a first step is to go beyond piece-meal regulation of plastics. A regulation that does not cope with the complete life circle of plastic products will not trigger a fundamental transition and shall be categorized

73 United Nations, Sustainable Development Goal 12: Ensure sustainable consumption and production patterns <<https://www.un.org/sustainabledevelopment/sustainable-consumption-production/>>.

74 Similar approach can refer to: Elaine Ritch, Carol Brennan and Calum MacLeod, 'Plastic Bag Politics: Modifying Consumer Behaviour for Sustainable Development' (2009) 33(2) *International Journal of Consumer Studies* 168.

75 Luca Marrucci, Tiberio Daddi and Fabio Iraldo, 'The Integration of Circular Economy with Sustainable Consumption and Production Tools: Systematic Review and Future Research Agenda' (2019) *Journal of Cleaner Production* 240; Sébastien Sauvé, Sophie Bernard and Pamela Sloan, 'Environmental Sciences, Sustainable Development and Circular Economy: Alternative Concepts for Trans-disciplinary Research' (2016) 17 *Environmental Development* 48.

76 UNGA, 'Transforming Our World: The 2030 Agenda for Sustainable Development' (2015) A/RES/70/1, 22.

77 *ibid.*

78 See the QA section in the EPA website to realize how many trivial problems are raised for the compliance of the 2018 reform. The Environmental Protection Administration, 'Q&A' (n 64).

as propaganda instead of solid actions.⁷⁹ A seemingly blanket but actually linear regulation set on calculation in number is certainly unrealistic to reach the goal, given all the grace period being set. The same, eco-awareness must evolve into motivational willingness to have real impact. The key solution is to make the 2018 plan substantively enshrined into living economic activities and gradually transform them.

Second, any proposed regulation needs to go beyond targeting consumption of plastics only. An effectual strategy must have potential to make substantive structural transitions that can animate or nudge the community and accordingly build up considerable momentum for fundamental reform. This plastic free economy (zero plastic economy) or at least zero-waste economy may only be achieved through a ban that can further responsible production and consumption on single-used plastic product that are recommended by SDG 12.

The 2018 plan also claimed that there would be more extensive regulations, but it is broadly unsatisfactory not because of the number of regulations but the target or scope of regulation. This may explain why there is an obvious regulatory blackhole or blind spot within this plan. A regulation that mostly limits itself to the side of consumption is insufficient, which may cripple the momentum for further reform. Taiwanese consensual demand for effectual actions do not refer only to more regulations to consumers and selling stores. Rather, it should be a request of change in behaviour in every segment of the economic activities, i.e. different participants from the side of production, including cargo, packing, or production industries, to the side of consumption.

Third, broader regulation needs to entail both environmental and social concerns. Environmental protection actions, including single-use plastic regulation against the pollution of plastic waste, must involve societal consideration. It needs to consider the fact that most of the impact caused will be undertaken by the most vulnerable citizens. The 2018 reform, for instance, affected at least four times more small businesses (around eighty thousand stores) than that of 2002 regulation. The coming measures will affect more small businesses who sell street food to earn their living. On the other hand, this could have a disproportionate impact on the poor through driving up prices, because the poor rely on frugal meals that are sensitive to the elasticity of price.⁸⁰

Notwithstanding these societal concerns, relevant regulations should not be deterred or deferred. Rather, the important message is that the regulator needs to think of local, social issues and protect the interest of the poor. The reform should integrate different parts, turn conflicting interests into impulse of the system, and in turn benefit all participants. For instance, the sensibility to the price can be converted into incentive to reuse and recycle, while benefits from the collected tax (or fee) and recycle industries should reward the destitute and waste-picker. In summary, a sustainable development approach emphasizing systematic consideration to local factors including societal dimension is pepping up as the firm belief and vision of Taiwan society.⁸¹

⁷⁹ The Environmental Protection Administration, "Why Not Regulate the Use of Single-use Utensils for Street Vendors and Stallholders in Night Markets" (n 13).

⁸⁰ Qamar Schuyler and others, 'Economic Incentives Reduce Plastic Inputs to the Ocean' (2018) 96 Marine Policy 250; Nicholas Rivers, Sarah Shentstone-Harris and Nathan Young, 'Using Nudges to Reduce Waste? The Case of Toronto's Plastic Bag Levy' (2017) 188 Journal of Environmental Management 153, 154.

⁸¹ The Environmental Protection Administration, 'Sustainable Resource Utilization via Circular Economy' (2019) 1 Electronic Environmental Policy Monthly <<https://www.epa.gov.tw/DisplayFile.aspx?FileID=8E2B6233B5C61F3E&P=fbf2d30f-e269-4fc9-acfc-34491520c68a>>.

Finally, the transition to a circular economy needs to be based upon building a localised and closed loop, formulating a local and independent circuit.⁸² As suggested above, reforms need to target both production and consumption. Especially when the community cannot sustainably and responsibly utilise its wastes for future production and consumption, the community should reduce its exploitation and production at the very beginning. Essentially, a circular economy must not largely rely on others to handle its own problems.⁸³ This is different from the current reform track that is largely entrenched in present economic model. The existing economic system features mass-production of plastic products, wide-spreading consumption and heavy reliance on petroleum resources, it also equips with effective disposal system and particularly high recycle rate.⁸⁴

The 2018 plan looks progressive in the sense of circular economy, but it in effect makes little progress in fundamental transformation regarding present economic model featuring the extensive productions of plastics, the source of all plastics pollutions. At most, this economic model can be realised as a neo-liberal approach to circular economy.⁸⁵ It holds that environmental protection should be approached through technological innovation and economic rationale, particularly free market mechanism.⁸⁶ What's more, environmental protection could even become a good business for everlasting economic development.

On the contrary, suppose that the 2018 plan can put more stress on the side of production or supply side, that is, to target the plastics industries to have a structural and systematic reform. Of course, this requires efforts: preparation work, including investigations, considerations, deliberations and balancing, need to be coped with beforehand. However, it is much easier to track its implementation and to have factual effect. It is because the production is at the core of the economic activities, regulation on the side of production will profoundly link and affect the rest parts of the economic system including consumption, exploitation, and recycling at once. In this way, the regulation can thus form the circuit of the economy, and the effect of the regulation can be expanded to the entire loop of life circle.

82 AK Winans and H Deng Kendall, 'The History and Current Applications of the Circular Economy Concept' (2017) 68 *Renewable and Sustainable Energy Reviews* 825; Denise Reike, Walter JV Vermeulen and Sjors Witjes, 'The Circular Economy: New or Refurbished as CE 3.0? — Exploring Controversies in the Conceptualization of the Circular Economy through a Focus on History and Resource Value Retention Options' (2018) 135 *Resources, Conservation and Recycling* 246.

83 Mark Anthony Camilleri, 'The Circular Economy's Closed Loop and Product Service Systems for Sustainable Development: A Review and Appraisal' (2019) 27 *Sustainable Development* 530; Commission, 'Closing the Loop - An EU Action Plan for the Circular Economy' (Communication) COM (2015) 614 final.

84 行政院新聞傳播處 [Department of Information Services], 「推動多元化垃圾處理—讓垃圾變資源」 [Promoting Diversified Approaches in Managing Waste] (Executive Yuan website, 21 July 2017) <<https://www.ey.gov.tw/Page/5A8A0CB5B41DA11E/70ee13a1-d525-4d92-8bc1-9901e3d1e605>>; Kathy Chen, 'Taiwan: The World's Geniuses of Garbage Disposal' *The Wall Street Journal* (Taipei, 17 May 2016) <<https://www.wsj.com/articles/taiwan-the-worlds-geniuses-of-garbage-disposal-1463519134>>; Marcello Rossi, 'How Taiwan Has Achieved One of the Highest Recycling Rates in the World' *Smithsonian* (Taipei, 3 January 2019) <<https://www.smithsonianmag.com/innovation/how-taiwan-has-achieved-one-highest-recycling-rates-world-180971150/>>

85 A Flynn and N Hacking, 'Setting Standards for a Circular Economy: A Challenge Too Far for Neoliberal Environmental Governance?' (2019) 212 *Journal of Cleaner Production* 1256; A Murray, K Skene and K Haynes, 'The Circular Economy: An Interdisciplinary Exploration of the Concept and Application in a Global Context' (2017) 140(3) *Journal of Business Ethics* 369.

86 J Stiglitz, 'Neoliberalism Must be Pronounced Dead and Buried. What's Next' *The Guardian* (30 May 2019) 13.16 <<https://www.theguardian.com/business/2019/may/30/neoliberalism-must-be-pronounced-dead-and-buried-where-next>>.

As such, the circular economy requires a strong determination to a thorough revolution and to overturn existing economic arrangement.⁸⁷ It demands collaboration from different departments of the government and various sections in private sectors.⁸⁸ There must be a complicated process and a suffering transition period.⁸⁹ A transition toward circular economy must involve painful economic reform and cannot be produced merely on paper in the government office. In the case of Taiwan, up to date, it has largely been formulated through government policy on paper, and hence reports of the circular economy in Taiwan sounds very much like a win-win story rather than a struggling battle where there are sacrifices must be made.⁹⁰

In practice, since this ideal model of circular economy must accompany with difficult transformation, it needs to learn how to find local conditions and model to maintain the circular. As global trend and popularity cannot support this painful process, there is no universal template that regulators can copy from. This requires more cogent social support and political consensus toward a commonly shared and desirable future, which can only be possible after continuous discussion and deliberation. To make the local model of circular economy sustainable, the first step is to expose the illusion that we are already on the right track to circular economy. If this paper may have some contribution, it is hoped to do its bit in this regard.

6 CONCLUSION

Observing from the simple fact that to date Taiwan annually consumes 1.8 billion single-use plastic bags, four times more than that in EU, Taiwan's plastic regulation is hardly a success as claimed. However, Taiwan's case can still be an important lesson people can learn from. This paper demonstrates that despite its goodwill, the 2018 plan stands on a questionable diagnosis and target and may therefore lead to unwanted results. This research points out the ambivalence within regulations referred is a more precise description to the reason of the regulatory failure than the claimed lack of awareness and insufficiency in regulation. The solution to the regulatory failure, therefore, does not consist simply in transplanting foreign regulations as benchmark or in educating the subject. The hope of success rests on reflecting local concern and priority agenda, as well as finding grass-roots manner and resources in dealing with global plastic issue.⁹¹

By saying that, this paper by no means suggests environmental issue should get away from global vision. It only says that domestic sustainability can no longer be attained in an isolated manner or by exporting waste or outsourcing polluting industries through the neo-liberal global trade to the ignored corners of the world.⁹² It is essential to integrate local dynamic into global goal and to resist the temptation to regard and transplant foreign regulatory measures as a universal model of solution. To mimic or imitate alien institution designs does no good to international cooperation and

87 Roberto Merli, Michele Preziosi and Alessia Acampora, 'How do Scholars Approach the Circular Economy? A Systematic Literature Review' (2017) *Journal of Cleaner Production* 703.

88 Anna Whicher and others, 'Design for Circular Economy: Developing an Action Plan for Scotland' (2018) 172 *Journal of Cleaner Production* 3237; Valerio Elia, Maria Grazia Gnoni and Fabiana Tornese, 'Measuring Circular Economy Strategies through Index Methods: A Critical Analysis' (2017) 142 *Journal of Cleaner Production* 2741; Patrizia Ghisellini, Catia Cialani and Sergio Ulgiati, 'A Review on Circular Economy: The Expected Transition to a Balanced Interplay of Environmental and Economic Systems' (2016) 114 *Journal of Cleaner production* 1, 8.

89 Whicher and others *ibid*.

90 Executive Yuan, 'To Promote Circular Economy' (n 33).

91 Xanthos and Walker (n 59) 19.

92 Peter Dauvergne, 'Why is the Global Governance of Plastic Failing the Oceans?' (2018) 51 *Global Environmental Change* 22, 24.

linkage for the sake of global governance. The appearance of these copied measures may possibly be identical, but since the underlying philosophies distinct, regulatory effects will differ. The purpose of this argument is to highlight global environmental issues should be tackled from the ground.

All the single-used products are irrational use of nature resource and detrimental to global sustainability.⁹³ To refuse and reduce the usage of plastic bags and products, or at least to reuse and recycle plastic bags so as to avert from the reliance on petroleum might be the only way to approach global sustainability. The circular use of nature resource should not be realized as an excuse for consumerism⁹⁴ and novel boom for economic development.⁹⁵ As ecologically there is always a price to pay for the usage of nature resource, even in a circular use. In this sense, Taiwan's 2018 reform plan can only be celebrated until a zero-plastic commitment entrenched and executive measures adopted.

93 Jouni Korhonen and others, 'Circular Economy as an Essentially Contested Concept' (2018) 175 *Journal of Cleaner Production* 544, 551.

94 Kish (n 32).

95 Patrizia Ghisellini, Catia Cialani and Sergio Ulgiati (n 88).

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