THE OCEANS ARE DROWNING IN PLASTIC

CHINA'S DECISIVE ROLE IN A GLOBAL MATTER

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GLOBAL DIMENSIONS OF PLASTIC [1,2]

8.3 BILLION TONNES

of plastic were produced globally between 1950 and 2015

≙

More than **ONE TONNE PER PERSON** living on the planet today

From all the plastic waste the world had ever produced

only 9% has been recycled

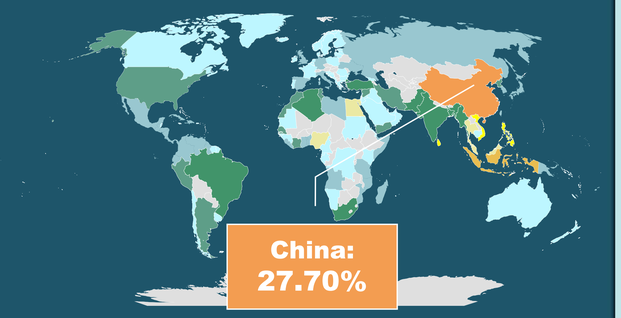
12% has been incinerated

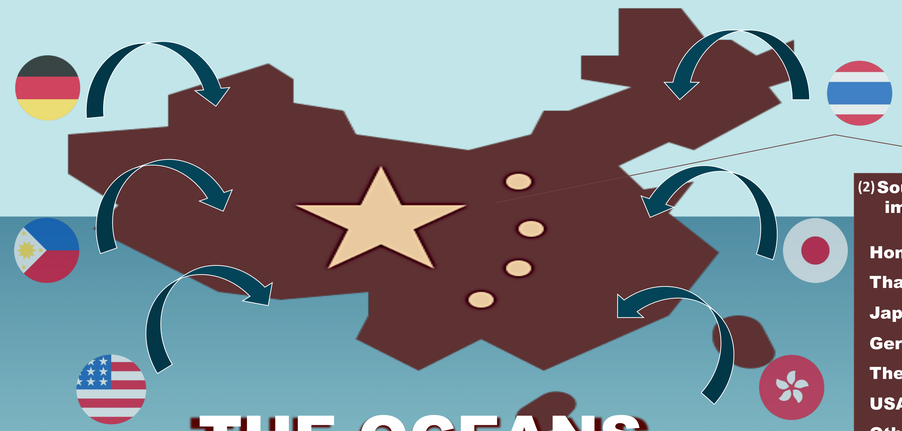
79% has been accumulated In landfills, dumps or the natural environment

THE GLOBAL PLASTIC PLAYER

China is by far not only the most populated country in the world but also largest plastic consumer and producer, contributing **29% of the global thermoplastics and polyurethanes production**. For countries of the Global North, such as UK and USA, China had until recently offered the possibility to dispose of plastic waste and prevent it from being landfilled or incinerated in the countries of origin by importing their shipping-processed plastic waste. Estimates assume that in the last two decades, almost half of the planet's plastic waste has been shipped to China to profit its recycling industry. Especially less valuable plastic is regularly discarded with inadequate management, possibly finding its way into the ocean. Data from 2010 to 2016 indicate, that the import of plastic waste adds 10 to 13% of mass to the domestic plastic waste, that is already poorly managed. Overall, China contributes **1.3 million to 3.5 million tonnes of plastic** to the world's oceans annually. [3,4,5]

(1) SHARE OF GLOBAL MISMANAGED PLASTIC WASTE (2010)





(2) Sources of plastic waste imported in China 2010

	kt
Hong Kong SAR	1984
Thailand	802
Japan	737
Germany	669
The Philippines	455
USA	426
Others	2972

(4) Annually at least 8 MILLION TONNES of plastic leak into the ocean

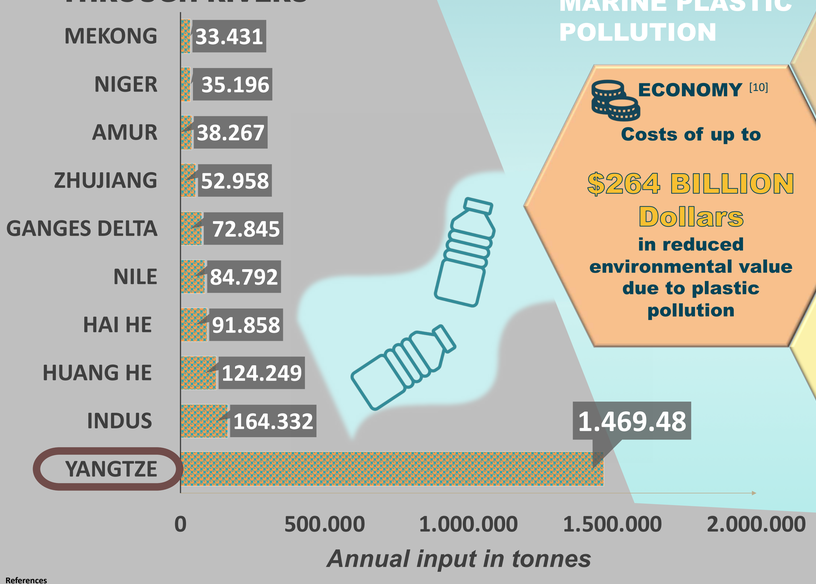
≙ ONE TRUCK LOAD PER MINUTE



86 [1] MILLION TONNES

Total amount of plastic that entered the ocean

(5) OCEAN PLASTIC INPUT THROUGH RIVERS



CONSEQUENCES OF MARINE PLASTIC POLLUTION

MARINE LIFE [11]

100.000 MARINE MAMMALS *die every year as a result of plastic pollution*

ECONOMY [10]

Costs of up to **$264 BILLION Dollars** in reduced environmental value due to plastic pollution

CLIMATE [12]

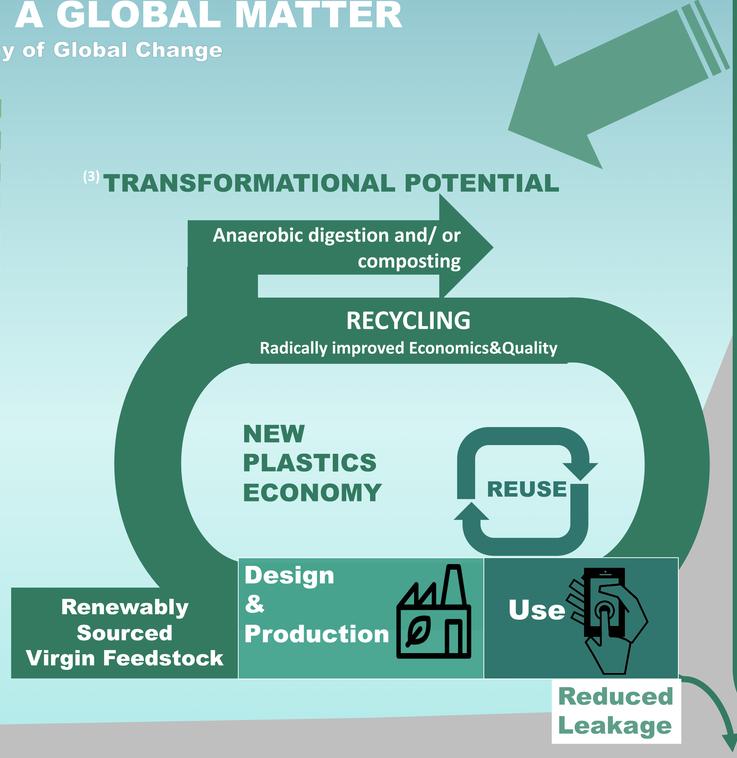
In terms of CO_2 emissions

Recycling 1 MILLION TONNES OF PLASTIC ≙ Taking 1 MILLION CARS off the road

HEALTH [9]

Trophic transfer: Ingestion of microplastics by a marine species, plastic potentially enters the food chain → **Exposure to chemicals**

(3) TRANSFORMATIONAL POTENTIAL



COURSES OF ACTION

In 2018 China's central government has implemented an **import waste ban, which has lowered the plastic imports by 99%.** Additionally, the country has revealed a plan to reduce its single-use plastic across all towns and cities by 2022, which began already in 2021 with a ban in every major city. In the future, China's new plastic regulations could lead to a reduction in plastic waste, as well as an improvement in the recycling of its own plastic waste, thus diminishing its share of plastic in the ocean. Given the important role its recycling industry plays for the waste management of other countries and its ban on waste imports, illegal plastic disposals and ocean littering might even increase in the beginning. At the same time, it can also provide food for thought in the handling of plastic and its subsequent disposal in large parts of the world, **as the global dumping ground China is no longer available.** In addition, **global cooperation will be necessary** in the future to strive for an overall reduction in plastic production and a more stable recycling industry. Models of action such as the **New Plastics Economy** could play a leading role in this context. [5,6,7,8,13]

References

1 Heinrich-Böll Stiftung, & Bund für Umwelt und Naturschutz Deutschland. (2020). PLASTIKATLAS 2019. Daten und Fakten über eine Welt voller Kunststoff (5th Edition), p. 8, 29. **2 UNEP. (n.d.).** Our planet is drowning in plastic pollution-it's time for change! Retrieved February 20, 2021, from https://www.unep.org/interactive/beat-plastic-pollution/.**3 Wang, M. H., He, Y., & Sen, B. (2019).** Research and management of plastic pollution in coastal environments of China. 248, p. 899. **4 Brooks, A. L., Wang, S., & Jambeck, J. R. (2018).** The Chinese import ban and its impact on global plastic waste trade. 4, p. 1,3. **5 Garcia, B., Fang, M. M., & Lin, J. (2019).** Marine Plastic Pollution in Asia: All Hands on Deck. 3, p. 19. **6 Huang, Q., et al. (2020).** Modelling the global impact of China's ban on plastic waste imports. 154, p. 10. **7 Albert, E. (2020).** China Tackles Its Plastic Problem. The Diplomat. Retrieved March 06, 2021, from https://thediplomat.com/2020/01/china-tackles-its-plastic-problem/. **8 Joe, T. (2021).** China Single-Use Plastic Bag & Straw Ban Now In Effect Across Major Cities. Retrieved March 06, 2021, from https://www.greenqueen.com.hk/china-single-use-plastic-bag-straw-ban-now-in-effect-across-major-cities/. **9 Plastic Soup Foundation. (2018).** Trophic Transfer of Microplastics in Seals confirmed. Plastic Soup Foundation. Retrieved March 06, 2021, from https://www.plasticsoupfoundation.org/en/2018/09/trophic-transfer-of-microplastics-in-seals-confirmed/. **10 Beaumont, N. J., et al. (2019).** Global ecological, social and economic impacts of marine plastic. 142, p. 193. **11 WWF. (2018).** The lifecycle of plastics. WWF. Retrieved March 06, 2021, from https://www.wwf.org.au/news/blogs/the-lifecycle-of-plastics#gs.uplifl. **12 European Parliament. (2018).** Plastic in the ocean: The facts, effects and new EU rules. European Parliament. Retrieved March 06, 2021, from https://www.europarl.europa.eu/news/en/headlines/society/20181005STO15110/plastic-in-the-ocean-the-facts-effects-and-new-eu-rules. **13 World Economic Forum, Ellen MacArthur Foundation, & McKinsey & Company. (2016).** The New Plastics Economy. Rethinking the Future of Plastics, p. 31.

Figures

(1) Share of global mismanaged plastic waste in 2010 (own figure based on: Jambeck, J. R., et al. (2015). Plastic waste inputs from land into the ocean. 347(6223)) **(2) Sources of plastic waste imported in China** (own figure based on: Velis, C. (2014). Global recycling markets: Plastic waste. International Solid Waste Association, p. 7) **(3) Transformational Potential** (own figure based on: World Economic Forum. (2016). The New Plastics Economy. Rethinking the future of plastics, p. 31) **(4) Annual amount of plastic** (own figure based on: World Economic Forum, Ellen MacArthur Foundation, & McKinsey & Company. (2016). The New Plastics Economy. Rethinking the Future of Plastics, p. 29) **(5) Ocean plastic input through rivers** (own figure based on: UNEP. (n.d.). Our planet is drowning in plastic pollution-it's time for change! Retrieved February 20, 2021, from https://www.unep.org/interactive/beat-plastic-pollution/)