

2022 Autumn Admissions for Eikei University of Hiroshima
(Selection of International Students/
Integrated Selection of Japanese Students in English)
- First Window -

Short Essay Question

Since July 2020, retailers in Japan have been required to charge fees for plastic bags under the Japanese government's environmental initiative. Similarly, several municipalities and organizations around the world have banned single-use plastics. Meanwhile, the positions and meanings of "plastics" depend on the situations in which they are used and the ways in which the problem is approached.

The following texts (1-3) discuss issues related to plastics from different perspectives and approaches. What are your opinions about the problems surrounding plastics? What can we do to solve these problems? Write about your thoughts on this issue based on your understanding of the assigned texts. To support your ideas, summarize at least two of the following texts and introduce their main their arguments.

In addition to the readings, consulting other relevant materials is also encouraged (e.g., dictionaries, statistical studies, books, articles, governmental and international organizations' websites, etc.).

Readings

Text 1: Is a world without single-use plastics possible?

Text 2: Characteristics of plastics from the viewpoint of environmental load

Text 3: Considering plastics from a gender perspective

Notes

- Please use the assigned A4 template to type your essay in no more than two pages. (Approximately 600 words fit in one single-spaced page using 12-point Times New Roman font.)
- Your essay will be evaluated according to the criteria indicated on the next page. Your choice of texts will not influence the evaluation of your essay.
- The readings are written for the admission question based on the references listed in each text. They do not represent the principles or opinions of Eikei University of Hiroshima.

Evaluation criteria: Eikei University of Hiroshima will evaluate your essay based on the following criteria.

Basic requirements

- Is the essay within the assigned length?
- Is the essay written using the provided template?
- Does the essay respond to the assigned question?
- Is the essay written in comprehensible sentences? (e.g., using appropriate grammar and spelling)

Content

Basic academic skills

- Does the essay show a good understanding of the main arguments of the readings?
- Does the essay distinguish clearly between facts and opinions, and does it express the author's opinions persuasively and effectively?

Broad vision

- Does the essay use appropriate data, evidence, and materials to support its argument?
- Does the essay fairly represent the multiple phenomena and positions covered in the readings, and does it demonstrate a good grasp of the differences and relations among them?

Other

- Originality and creativity

* The following criteria will be graded as additional points:

Strong interest in inquiring into various cultures, histories, societies both at home and abroad, and international relations

Willingness to learn

Willingness to strengthen one's ability

Willingness to contribute to society

Positive attitude toward studying with a sense of purpose and a vision for the future

Positive attitude toward actively communicating with others

Positive attitude toward taking initiative and involving others in addressing various challenges

Is a world without single-use plastics possible?

Wrappers for vegetables and deli goods, packing materials for online shopping deliveries, masks, and garbage bags—our everyday life is filled with single-use plastics. Moreover, these are all necessary to keep our food hygienic, protect fragile products, and guard against infectious diseases. Yet single-use plastics, from their production to their disposal, are also known to be a cause of global environmental pollution. Researchers have reported the impact of plastics on ocean pollution (Jambeck et al., 2015), air pollution (Fuller, 2021), and climate change (Minderoo Foundation, 2021). Meanwhile, a recent report suggests that the number of companies producing single-use plastics is relatively small. This being the case, regulating the production and circulation of plastics may be an effective way to improve the environment. This essay will explore this possibility through consideration of several different perspectives.

The limits of recycling

Recognizing that plastics are essential to everyday life and that their waste is problematic, one might think that consumers should simply recycle more. One science communicator, Matt Wilkins, however, disagrees with this recycling narrative. Moreover, he states that it is a “lie” to put the blame on consumers.

The real problem is that single-use plastic—the very idea of producing plastic items like grocery bags, which we use for an average of 12 minutes but can persist in the environment for half a millennium—is an incredibly reckless abuse of technology. Encouraging individuals to recycle more will never solve the problem of a massive production of single-use plastic that should have been avoided in the first place. (Wilkins, 2018)

Leaving the recycling decision to consumers is equivalent to confining it to a matter of self-responsibility, which rarely solves any global issues. Wilkins, therefore, claims that rather than encouraging individual consumers to recycle, it is more important to create a better system. One idea for achieving this is the circular economy model, which minimizes waste by design. This would shift the responsibility for waste to producers, who could design products that can be reused easily or could create materials that can be used for longer periods.

Small producers

In May 2021, an Australian philanthropic organization, Minderoo Foundation (2021), published a report revealing the main sources of the environmental crisis caused by single-use plastic:

Today, single-use plastics account for over a third of plastics produced every year, with 98 percent manufactured from fossil fuels.

Unsurprisingly, single-use plastics also account for the majority of plastic thrown away the

world over: more than 130 million metric tons in 2019—almost all of which is burned, buried in landfill, or discarded directly into the environment. (p. 11)

The report then states that the number of polymer producers—the alleged source of the plastic pollution crisis—is surprisingly small:

In 2019, just 20 polymer producers accounted for more than half of all single-use waste generated globally—and the top 100 accounted for 90 percent.

ExxonMobil and Dow—both based in the USA—top the list, followed by China-based Sinopec, with these three companies together accounting for 16 per cent of global single-use plastic waste. (Minderoo Foundation, 2021, p. 12)

The report also suggests the importance of shifting to a circular economy, sharing recommendations with the main stakeholders, that is, the polymer producers themselves, investors and banks, policymakers, and other companies.

Plastic and COVID-19

As awareness regarding plastic pollution spreads, more governments and organizations have started to regulate single-use plastics. For example, in the USA, eight states banned plastic bags at stores and other businesses between 2014 and 2019 (National Conference of State Legislatures, 2021). However, the COVID-19 pandemic led to a reversal of this trend. To protect people against infection, some states postponed or suspended their plastic bans. Meanwhile, the plastics industry has started lobbying more stridently against plastic bans in the name of public health. John Hocevar of Greenpeace criticizes this lobbying as a “PR war,” noting that the industry is using the opportunity presented by the pandemic to argue in favor of their businesses based on inaccurate information (Chua, 2020). Hocevar claims that unlike single-use plastics, reusable bags and cups can be kept clean simply by washing them with soap and hot water. He adds that single-use plastics discarded carelessly can cause an even more serious public health threat. Eric Goldstein of the Natural Resources Defense Council emphasizes that is important to take a long-term perspective to cope with the pandemic:

We’re in the middle of the war, and so sometimes you’ve got to jury-rig temporary solutions to address concerns, even if they later proved unfounded. But when you’re talking about sustainability, it’s long-term trends and the direction of policy that’s important. (Chua, 2020)

For a sustainable world, combating diseases and protecting the environment should not be treated as an either/or dichotomy; rather, a long-term effort to coordinate the various important elements is required. Rather than relying on individual choices, we need to recreate the systems and infrastructures that influence individual behavior.

* * *

Imagining a world without single-use plastic may seem difficult. However, throughout our history, human beings have accomplished systemic changes that previously seemed unimaginable. Movements demanding the emancipation of slaves, regulations against child labor, and the abolition of various discriminatory systems were initially criticized and blamed as destroying industries, cultures, and lives, but over many years, their goals have since become accepted as *good* and even *normal* or *inevitable*. If so, it must be possible to shift to a circular economy, not only based on human rights but also on human co-existence with nature and the environment.

References

- Chua, J. M. (2020, May 20). Plastic bags were finally being banned. Then came the pandemic. *Vox*. <https://www.vox.com/the-goods/2020/5/20/21254630/plastic-bags-single-use-cups-coronavirus-covid-19-delivery-recycling>
- Fuller, G. (2021, February 26). It's not just oceans: Scientists find plastic is also polluting the air. *The Guardian*. <https://www.theguardian.com/environment/2021/feb/26/not-just-oceans-plastic-polluting-air-delhi-smog>
- Jambeck, J. R., Geyer, R., Wilcox, C., Siegler, T. R., Perryman, M., Andrady, A., Narayan, R., & Law, K. L. (2015). Plastic waste inputs from land into the ocean. *Science*, 347(6223), 768-771. [10.1126/science.1260352](https://doi.org/10.1126/science.1260352)
- Minderoo Foundation. (2021). *The plastic waste makers index: Revealing the source of the single-use plastics crisis*. <https://cdn.minderoo.org/content/uploads/2021/05/18065501/20210518-Plastic-Waste-Makers-Index.pdf>
- National Conference of State Legislatures. (2021). *State plastic bag legislation*. <https://www.ncsl.org/research/environment-and-natural-resources/plastic-bag-legislation.aspx>
- Wilkins, M. (2018, July 6). More recycling won't solve plastic pollution. *Scientific American*. <https://blogs.scientificamerican.com/observations/more-recycling-wont-solve-plastic-pollution/>

Characteristics of Plastics from the Viewpoint of Environmental Load

In their history, plastics have made a significant contribution to improving our quality of life (QOL). At the same time, they also have another aspect: they have become a significant source of environmental stressors such as CO₂ emissions throughout their life cycle (production, use, and disposal), as well as air and marine pollution due to inadequate burning and disposal. In light of this, the problem of plastic waste has been mentioned in the UN's SDGs, and was discussed in the G20 meeting in Osaka in 2019, as requiring an urgent global response.

For a closer analysis, there is a method to assess environmental loads called the life cycle assessment (LCA). LCA is "a technique to assess the environmental aspects and potential impacts associated with a product, process, or service" (SAIC, 2006); that is, the environmental load of a product or service is calculated by examining the entire value chain. A simplified value chain of plastic products in LCA is shown in Fig. 1 (Bishop et al., 2021). It is important to note that even within the single word "plastic," there are various production methods, chemical compositions, shapes, etc., and their usage environments vary. The value chain described in Fig. 1 thus does not portray the exact chain for every plastic, and as a result, different plastics' environmental loads will deviate from this simplified model. Therefore, when considering the environmental load of a specific plastic product, it is important to understand its particular features, quantitatively and based on scientific evidence.

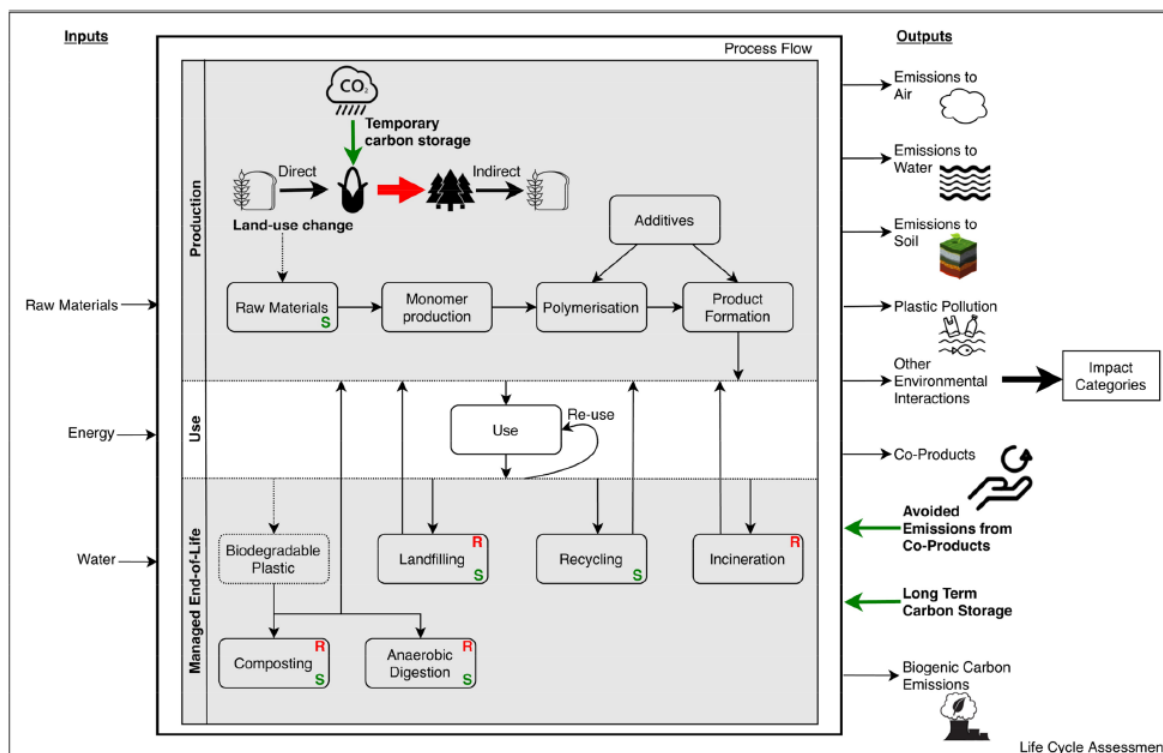


Figure 1. “A simplified schematic of a plastic value chain represented in LCA. The main processes, inputs, and outputs are displayed. Dashed lines represent flows specific to biodegradable plastics. The diagram also gives an indication of carbon flows throughout the system, with S representing carbon storage, and R representing the release of the carbon” (Bishop et al., 2021).

The Environmental Protection Agency of Denmark (2018) clarified that plastic shopping bags have a minimal environmental load based on LCA, referring to various indicators regarding the carrier bags available in Danish supermarkets (Table 1) (please refer to the original report regarding the abbreviations), and this report recommended specific reuse and disposal methods for each common type of bag.

Table 1. “Carrier bags providing the lowest environmental impacts for all the environmental indicators considered. The order in which the bags are listed corresponds to the ranking of their LCA results starting from the lowest impact. Only the three lowest scoring bags are listed” (Environmental Protection Agency - Ministry of Environment and Food of Denmark, 2018) .

Environmental indicator	Carrier bags providing lowest impacts
Climate change	Paper unbleached, biopolymer, LDPE
Ozone depletion	LDPE
Human toxicity, cancer effects	Paper unbleached, LDPE
Human toxicity, non-cancer effects	Composite, PP, LDPE
Photochemical ozone formation	LDPE
Ionizing radiation	LDPE
Particulate matter	LDPE
Terrestrial acidification	LDPE
Terrestrial eutrophication	LDPE
Freshwater eutrophication	LDPE
Marine eutrophication	PP, LDPE
Ecosystem toxicity	LDPE
Resource depletion, fossil	Paper unbleached, LDPE
Resource depletion, abiotic	PP, LDPE
Water resource depletion	LDPE, biopolymer

It must also be emphasized that the amount of plastics people use is related to their income levels. Moreover, the infrastructure of local waste treatment systems, which can reduce plastics' environmental loads, depend on the area's economic status. For example, Ritchie and Roser (2018) demonstrated the correlation of the per capita mismanaged plastic waste generation rate and the per capita GDP (Fig. 2). Their findings reveal an inverse-U pattern indicating that mismanaged waste generation tends to be low at very low incomes, then rises towards middle incomes, and then falls again at higher incomes. An increase in mismanaged plastic waste is thus typically observed in middle-income localities, where the waste management has not caught up with the significant rate of development. It can be seen that countermeasures regarding this trend are important.

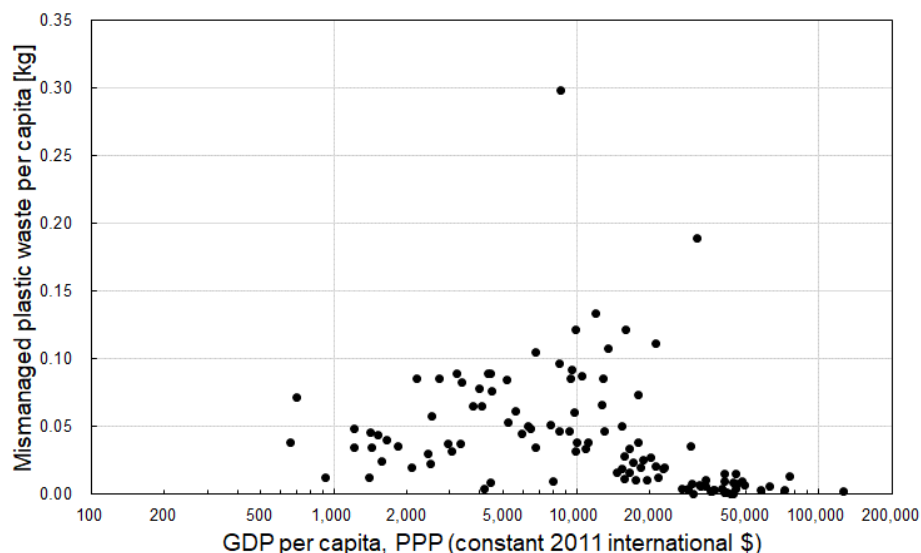


Figure 2. “Mismanaged plastic waste per capita vs. GDP per capita. Mismanaged waste is waste that is littered or not formally managed, which includes disposal in dumps or uncontrolled/open landfills” (Ritchie & Roser, 2018). This figure is based on data available from Ritchie and Roser (2018), based on the 2010 population ≥ 1 million.

Considering their role in guaranteeing people's QOL, it is unlikely that plastics will rapidly disappear from our society. We should instead relate well to plastics with special attention to decreasing their environmental loads. To do so, it is crucial to discuss concretely what we must do based on scientific evidence. Taking into account the perspectives described in this essay, example next steps should include the development of plastic materials which have the same or better functionality than current plastics but less environmental load (see Table 1) as well as the promotion of international collaboration for better plastic waste management systems.

References

- SAIC - Scientific Applications International Corporation. (2006). *Life Cycle Assessment: Principles and Practice*, EPA/600/R-06/060. *National Risk Management Research Laboratory Office of Research and Development, U.S. Environmental Protection Agency*.
<https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=P1000L86.txt>
- Bishop, G., Styles, D., & Lens, P. N. L. (2021). Environmental performance comparison of bioplastics and petrochemical plastics: A review of life cycle assessment (LCA) methodological decisions. *Resources, Conservation & Recycling*, 168, 105451.
<https://doi.org/https://doi.org/10.1016/j.resconrec.2021.105451>
- Environmental Protection Agency - Ministry of Environment and Food of Denmark. (2018). *Life Cycle Assessment of grocery carrier bags* (Environmental Project no. 1985).
<https://www2.mst.dk/Udgiv/publications/2018/02/978-87-93614-73-4.pdf>
- Ritchie, H., & Roser, M. (2018). *Plastic Pollution*. Our World in Data. Retrieved June 16, 2021, from <https://ourworldindata.org/plastic-pollution>

Considering plastics from a gender perspective

At 6:30 in the morning in Afar, Ethiopia, Aysha starts walking in her flip-flops, with only a camel to accompany her, to collect water. It takes four hours each way. This 13-year-old girl thus spends eight hours every day to get five liters of water for her entire family (Farley, 2018).

Across the world, domestic work is often supported by the free labor of women and girls. Particularly in the many households with water located off premises, women are responsible for the task of collecting water. UNICEF reports that every day 300 million hours (8.3 million days) in total are spent on this task by women all over the world. Aysha's case is especially tough, but as the following reports shows, collecting water is a tedious task in many areas in the world, which is part of the reason that better access to safe water is one of the SDGs:

The UN's Sustainable Development Goal for water and sanitation, Goal 6, calls for universal and equitable access to safe and affordable drinking water by 2030. The first step is providing everyone with a basic service within a 30-minute round trip, and the long term goal is to ensure everyone has safe water available at home. However, UN estimates are that in sub-Saharan Africa, for example, for 29 per cent of the population..., improved drinking water sources are 30 minutes or more away.

In sub-Saharan Africa, one roundtrip to collect water is 33 minutes on average in rural areas and 25 minutes in urban areas. ... However for particular countries the figures may be higher. A single trip takes longer than an hour in Mauritania, Somalia, Tunisia and Yemen. (UNICEF, 2016a)

If women and girls had less time-consuming access to safe water, they could go to school or take up a different job. Moreover, easy access to safe drinking water would contribute to reducing the significant number of deaths among young children; this is urgently needed as the world continues to observe more than 500,000 children dying of diarrhea every year (UNICEF, 2016b). However, it is not easy to create the infrastructure for water supply in some developing areas. One possible alternative in this case is to provide water in plastic containers instead. Indeed, people in many developing countries and middle-income countries often rely on water from plastic bottles, and as a result, these regions produce a significant amount of plastic waste. Therefore, improving water supply infrastructure is recommended to reduce plastic waste (Harvey, 2020). Meanwhile, we should also recognize that safe water carried in plastic containers, whether bags or bottles, is protecting people's health and life, as well as reducing women's burden in the current world.

Plastic also influences women's bodies and care work in various other areas and situations. For example, in Mexico City, where a single-use plastic ban has proceeded in phases, a controversy ensued when this ban extended to tampon applicators:

"Menstrual products, including tampons, are contributing to the pollution of our environment," said Ornela Garelli, who works for Greenpeace Mexico on consumption issues.

Garelli said there's no data showing how much female sanitary products contribute to pollution, but the nonprofit sees the products as similar to disposable diapers, which account for almost 7% of waste. ...

“The law has no gender perspective,” said Anahí Rodríguez, the group’s spokesperson, speaking in Spanish.

She said tampons are the best choice for many women, while environmentally friendly choices, like menstrual cups, are expensive and rare. (Cervantes, 2021)

As Rodríguez suggested above, the availability of alternatives such as menstrual cups instead of tampons and napkins also depends on each woman’s constitution, education, and economic conditions. In addition, diapers, which Garelli mentioned above, are inseparable from women's labor. Even if one uses cloth sanitary napkins and diapers instead of those made from plastic, these cloth alternatives are not always as eco-friendly as they first appear, especially when taking into account all the resources used for cloth production, maintenance, and cleaning (Schley, 2018). Meanwhile, the associated need to wash these cloth diapers frequently and to keep the bodies of babies and the elderly clean greatly increases the burden of care work. Again, at present, much of this care work is carried out by women, often at low wages or as unpaid labor.

Reducing the environmental damage caused by plastics and protecting the global environment may well be a common and urgent issue for all human beings. However, the significance and role of plastic products is by no means uniform, particularly given the differences between rich countries with well-developed infrastructure and poor countries without it, the required labor differences between women and men, and physical differences between women and men. In addition to improving our approach to the problems associated with plastics, rethinking these problems from a gender perspective could also prompt new sensitivities and lines of thinking regarding other forms of difference and other pressing global issues and set us on a better path toward working to address these problems.

References

- Cervantes, R. (2021, April 20). In Mexico City, a plastics ban promotes debate over women’s access to tampons. *Marketplace*. <https://www.marketplace.org/2021/04/20/in-mexico-city-a-plastics-ban-prompts-debate-over-womens-access-to-tampons/>
- Farley, M. G. (2018). How long does it take to get water? For Aysha, eight hours a day. *UNICEF USA*. <https://www.unicefusa.org/stories/how-long-does-it-take-get-water-aysha-eight-hours-day/30776#>
- Harvey, F. (2020, May 27). Improve water supply in poorer nations to cut plastic use, say experts. *The Guardian*. <https://www.theguardian.com/environment/2020/may/27/improve-water-supply-in-poorer-nations-to-cut-plastic-use-say-experts>
- Schley, C. (2018, May 15). Cloth vs. disposable diapers: Which kind should I use? *Wirecutter*. <https://www.nytimes.com/wirecutter/blog/cloth-vs-disposable-diapers/>
- UNICEF. (2016a, August 29). *Collecting water is often a colossal waste of time for women and girls* [Press Release]. <https://www.unicef.org/press-releases/unicef-collecting-water-often-colossal-waste-time-women-and-girls>
- UNICEF. (2016b, November). *One is too many: Ending child deaths from pneumonia and diarrhea*. <https://data.unicef.org/resources/one-many-ending-child-deaths-pneumonia-diarrhoea/>