COVID-19 Is Making Us Less Sustainable

Human has been hurting the earth since the industrialization, and we are living in a critical era to cut the greenhouse gas emissions; unless global warming might go out of control of our hand. Since 2010, the trend of reusable products had gained popularity, and the decade of 2020 was projected as the new decade for sustainable products. However, at the beginning of the decade, we are facing one hurdle: global pandemic caused by long incubation-period, novel coronavirus.

"I have been practicing an environmental-friendly lifestyle for the past five years," indicated C Rosete, a University of Washington graduate. She has been using reusable cups instead of disposable take-out cups, sustainably sourced shoppers bags to replace weak paper bags, habiting plant-based diet, and avoiding harsh chemical products. (Let's acknowledge her contribution reducing her plastic use and carbon footprints. Not a lot of people can keep this extra-step lifestyle in this fast-paced society.)

The city of Seattle is known as a sustainable city that has set a goal of carbon-neutral by 2050 and has known for residents' awareness of global warming. You can spot people on the street with groceries in their reusable bags, bringing their straws to work and recycling card boxes. Until mid-march of 2020, Starbucks was promoting reusable cup users by discounting 10 cents per order, per potentially-used cups.

The outbreak of COVID-19, the global pandemic, has threatened public health and halt the use of reusable products such as cups and utensils from every cafés and restaurant. Self- service grain and dried fruit sections are temporarily closed in all grocery stores, so as self-service candies and so on.

Figure 1. Empty bulk foods

Figure 2. Selling more pre-packaged produces

Citizens are left to buy pre-packaged items, which usually are wrapped in petroleum-based products. However, they can still use their reusable shopping bags if they wanted to. We do not yet have the current study on people's behavior change in reusable or sustainable products after the outbreak since we are still in the middle of the fighting. However, the consumers' preference for produce and fresh fruits are high in demand. [1]

"I have a family member who has an underlying health condition and afraid of using reusable shopping bags since they are toughing contaminated surfaces(registers and merchandises). You don't want to risk anything when it comes to family," Rosete described.

"There is no evidence of food packaging being associated with the transmission of COVID-19," U.S. Food and Drug Administration(FDA) states. However, they are recommending shoppers to sanitize the shopping requirements and shoppers' hands. Shoppers like Rosete, who have a family member with underlying conditions are extra cautious, and only purchase food that is pre-packaged sanitizes every product when they are at home, and throw away the wrappings right away with disposable bags. It truly is a burden to break the lifestyle, but it seems like the time to prioritize the bigger elephant in the room.

Japan continues to use a lot of individual packaging, and petroleum-based product wraps on the market to maximize the shelflives. Though it was unintentional, the overpackaging tradition is reducing Japanese

[1] Anthony Leiserowitz, *Climate change and the American diet*, 2020.

citizens' concern of surface contamination via fresh produces. It is a normal thing to see a fruit or a vegetable in a sealed bag, as you can see in the photo.

Figure 3. Individually wrapped vegetables (Source: Norika Higuchi)

According to PWMI(Plastic Waste Management Institute), the utilization rate of collected plastic waste in Japan has reached 84% in the fiscal year of 2018. Even though the collected plastics are being reused, the majority of them are used to generate energy, thus emitting greenhouse gasses. [2]

Not only the overpackaging tradition is protecting Japanese citizens during the COVID-19 outbreak. Their social norms of habituating the mask prevented the massive explosion of the novel coronavirus. As a Japanese, I was raised to wear a mask whenever I was feeling unwell. I noticed that social norms are

[2] Plastic Waste Management Institute. *Plastic Products, Plastic Waste and Resource Recovery*. 2020.

very different when I moved to the United States. Wearing masks questioned my friends and reflected me as a seriously ill person.

In early-March, when COVID-19 started to spread in Washington State, I was one of the few students who would wear masks to big lectures. (In my case, I was fighting the seasonal allergic reactions.) When I was in public space outside the school, it was impossible to avoid glaring or curious gazes.

In the early stage of the COVID-19 outbreak, government officials were discouraging healthy people from wearing masks, that wearing the cover is not effective in preventing the transmission. However, on April 3rd, CDC(Centers for Disease Control and Prevention) has announced that public use of masks, including homemade cloth masks, are effective from the spread.

Now local crafters and small businesses are contributing to producing masks to fulfill the demand. However, this source states that the government did not respond fast enough, and now we are not ready to handle more-to-confirmed patients. People want to go back to their work regardless, and some still do not realize the danger of the virus.

Yale Program On Climate Change Communication shows that an average of 85% of people knows the "true" information regards COVID-19, whereas only 59% of surveyees were knowledgeable in "false" information. The survey was based on 3,933 American adults, and this is one of the most up-to-date reports on this topic of the pandemic.

Not only we need more data to analyze the COVID-19 relationship to a human reaction, but also how it will react with global warming. Will it provide any buffer? Recent data is showing that due to social distancing, the air traffic and greenhouse gas concentration has dropped. The side effect of the pandemic cleared the air and reduced pollution-related deaths; however, due to 20~200 years of lifespan of the carbon dioxide, this seems it is not likely to impact long-term global temperature drastically.

Katie Brennan, a graduate research assistant who studies sea ice at the University of Washington, voiced, "the first thing that really surprised me was how little data we actually have." She reconstructs Arctic sea

ice over the past two millennia using paleoclimate data assimilation. Brennan has been worried that the pandemic will threaten scientists and researchers – while funds are redirected to from climate-related projects to the pandemic funds. Delaying the infrastructure project such as seawall in the coastal cities are going to not only affect the residents but the chained economy, in case of the possible climate-related disasters.

Figure 4. Katie Brennan on the right with peer researchers in Finse, Norway collecting lake sediments

"I don't think that climate science is inherently political. I think that it was politicized," notes Brennan, who believes that climate science is essential to human life and should be taken more seriously. It is the fact that global warming has not slowed down but is continuing to affect the climate. If we cancel and delay too many projects, we are not only accelerating global warming but putting ourselves in a more vulnerable state in climate disasters.

The United States is one of the 197 countries that signed the Paris Agreement. The agreement is the promise between these countries which basically aims "to strengthen the global response to the threat of

climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius," stated in UNFCC(United Nations Framework Convention on Climate Change) homepage.

If we were to meet the goal, we need to take action right now. According to NOAA, National Oceanic and Atmospheric Administration, the year of 2019 was the second hottest year, following the year of 2016. 2019 record showed that average temperature across the globe showed 1.15ºC above the pre-industrial average. We only have 0.35ºC left until we meet the hard goal of the Paris Agreement.

Aside from that, we only have a short time to slow down the warming; there is a research paper indicating that there is unrealized warming from past CO2 emissions from decades up to a century in *Earth's Energy Imbalance: Confirmation and Implications*.[3] Hence the global warming we are currently measuring is the effect from a century ago, not from the current era. The paper was published in 2005 by a team led by James Hansen, and they referred to the phenomena as the global warming "in the pipeline." The idea was first announced to the public in 2005 and re-mentioned in the recent paper *Climate Change in a Nutshell: The Gathering Storm* in December 2018.[4]

The paper suggests that there is more than 0.5ºC of global warming in the pipeline that is not yet impacting the ecosystem. If we count that there is an additional 0.5ºC warming on top of current measurements, we are now at 1.65ºC above the pre-industrial measures. That is over the ideal "green goal" of 1.5ºC already. Though President Trump has announced the indication of the withdrawal from the Paris Agreement, scientists and the government need to continue the contribution in climate science for human sake.

President Trump also cut the NASA budget in 2018, which terminated four Earth science missions: PACE (Plankton, Aerosol, Cloud and ocean Ecosystem), OCO-3 (Orbiting Carbon Observatory 3),

[3] James Hansen, "Earth's Energy Imbalance: Confirmation and Implications." 2005.
[4] James Hansen, *Climate Change in a Nutshell: The Gathering Storm*, 2018.

DSCOVR (Deep Space Climate Observatory) Earth-viewing instruments, and CLARREO Pathfinder (Pathfinder to the Climate Absolute Radiance and Refractivity Observatory Mission). The budget request for 2021 has increased significantly; however, two of the under-development earth science missions(PACE, CLARREO Pathfinder) are in a line for the elimination again.

As Brennan said, “Is there going to be money to replace that satellite, or are we no longer going to have that measurement?” If the development of instruments like these get terminated for a long time, the existing satellites’ lifespan will end, and there might be no replacement that can continue to collect relevant data. Of course, private enterprises are developing similar satellites; however, “it is important to have the government’s support and their contribution to the earth science and the climate change,” Brennen addressed.

Though life and economy after the pandemic are still unclear, it is essential to note that there are 7.8 billion inhabitants on earth whos lives are dependant on foods created in the same ecosystem. “I worry about the people dragging their feet on this issue because they are often the people that are not going to be as affected as certain other communities,” Brennan added at the end of the interview, addressing the critical point: countries that are and will experience the most effect from climate change are not the main contributors in the global warming nor is aware of.

There is unnegotiable carbon emission from developing countries to become an industrial country. However, industrialized countries are equipped with enough resources to practice sustainability. When developed countries are responsible for most of the historical climate change, it is questionable to see unresponsible actions from those countries, including the U.S.

It is almost impossible to ask developing countries to be “sustainable” when they do not have solar panels or recycling system. If they invest in reusable containers and eco-friendly products, how many people can keep the hygiene routine and keep it sanitary? Will it cause the more significant problem that they did not

see when using everything disposal? It resembles the current COVID-19 pandemic, but this is an everyday life threat in a lot of developing countries to fight diseases.

The COVID-19 has caused people to use an excessive amount of disposal equipment (products) and chemicals to eliminate the virus. So, will people notice what they are doing and see its relationship to Climate Change? Or will they notice the more lucid air and develop their interest in Climate health? Brennan addressed, “Well, this is similar to what we talked earlier (last paragraph), I think people who got less impact might learn more through a pandemic, but people who became financially and physically vulnerable is to busy to keep up with more immediate responsibilities,”