THE FINAL STRAW

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ABSTRACT

This book will explore the idea of environmentalism and green movements as they apply to the food and beverage industry, and how the actions taken by companies extend to the consumers. Questions will be raised by a bartender and focus on the contradictions of statements released to the public, versus the policies acted upon behind the scenes away from general scrutiny. These ideas will be expanded upon and corporation level solutions based on current innovations in green technologies are proposed and explored in detail, extending into a theoretical future of a green food and beverage industry. The book will not solely focus on the actions of companies, it will also extend to the role consumers play in the environmental initiatives that business choose to enact. There will be a focus on what an individual can do to get the notice of seemingly large and removed corporations to influence their potential move towards a greener and more environmentally conscious future.

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How may I help you?

"Hi, my name is Morgan and I will be taking care of you today!" I learned to chirp those words through a pleasant smile no matter how far in the weeds I found myself during a busy dinner shift in the casino cantina where I worked. It did not matter is I uttered these words to a group that had just been seated at a table by our hostess, or a couple that had just claimed seats at my bar, I could usually accurately predict the rest of our interaction. After a brief exchange of pleasantries, my guests would order a round of drinks, usually the margarita of the month, and generously portioned entrees that would likely go unfinished prompting the request for to-go containers. Once the containers reached the guests, polite words of parting sent them on their way while I was tasked with scraping the leftover evidence of their stay into the garbage and reset for the next group of hungry patrons waiting to hear me say "how may I help you?"

I was comfortable with the monotony of the customer service routine choreographed by the food and beverage industry, but in 2019 the routine was changed by a piece of legislation passed in the state of California. This piece of legislation inconvenienced my guests by adding a step to their dining experience, those who wanted a plastic straw for their beverage now needed to ask for one instead of having one provided with their drink by default. At the time of this change, I did not think that it would really impact my day much since asking for a straw entails the same amount of energy as asking for extra ice, but this proved to be a naïve speculation and some guests acted as if the absence of a straw in their glass was a vile insult to them and their family. While the more violent outbursts were thankfully rare, the more common reactions included combinations of exaggerated eye rolling, sarcastic comments about how the state of California is

heading towards authoritarian rule, and questions about why one straw here and there even mattered in the grand scheme of things.

It was the line of questioning that eventually lead me to think back on the conversations I have had with guests when they discovered I was studying biology with an environmental emphasis. Usually they would feign interest until they left the bar or changed the topic of conversation to something more stimulating for them, but there were always a few that took it upon themselves to tell me why my entire field of study was pointless and I was heading down a swift path to failure. The general point these supposedly well intended individuals made was that the destruction of the environment was inevitable for civilization to continue to thrive and expand, and soon there wouldn't be a need to bother with studying the impact of development on or protecting the environment. Occasionally, it would also be pointed out that by working in a restaurant I was contributing to the waste and pollution and I should just accept that green technology and environmentally friendly policies are a distraction backed by "idealistic bleeding-heart hippies." At this point in the conversation, as a bartender that wanted to keep my job, I could do only one thing, smile, thank them for their input and advice, then steer the conversation to a new topic.

Working in the restaurant world for the entirety of my early twenties taught me how to brush off the criticism given to me by strangers that were only in my life for the duration of a meal, but the increasing frequency of conversations picking apart my studies became difficult to ignore. I realized that I had a choice to make, stop answering the questions about my life outside of the bar with the truth, change my education and career goals, or find a way to make a difference that I could talk about with my guests without the fear of losing my job. I chose the third option. Although, I must admit that choice had already been made before the plastic straw ban in

California catapulted to the headlines in 2019. At this time I was already working on a project that could combine my interest in a more environmentally friendly future and the industry that I have developed an intimate knowledge of through my years of employment, the heated bar top conversations only fortified my determination to see the project reach completion.

I'll walk you through the menu.

Over the last two years, I have been exploring the how environmentally friendly the food and beverage industry currently is and how it may be improved in a world shifting towards a greener, more sustainable future. Currently, the food and beverage industry is not very environmentally friendly when every aspect from supply to table and everything in between is taken into careful consideration. While it is easy to focus entirely on the waiter/guest interaction and the waste produced in that interaction, there is also a plethora of behind the scenes activities that add to the waste of the industry as a whole and must also be addressed. The goal of this project is to address the obvious consumer level (front of house) interactions and those behind the scenes (back of house) activities that contribute to the environmental sustainability or lack thereof of the food and beverage industry and propose ways to increase that sustainability and reduce waste in the future.

I have identified three major categories that can alter the overall environmental friendliness of the food and beverage industry, plastic utilization, generation of food waste, and the companies that supply restaurants with their ingredients. All three of these categories are intertwined with the day to day running of both the front of house and back of house operations but propose their own unique sets of challenges for moving towards a greener future. In the following pages I will

break down each category into its most basic components, identify front of house and back of house challenges, and address possible solutions to those challenges.

I find that green energy and the automotive and transportation industries often dominate the conversations about paving the way for a sustainable or green future and the food and beverage industry is boiled down to just the accumulations of discarded plastic straws in the oceans. This, however, ignores a large portion of what goes on inside the walls of a restaurant or bar and does not put pressure on the industry to change because there are very few people damning the practices that happen out of customer view. After my years spent in the food and beverage industry, I believe that it is irresponsible to remain silent and praise the companies that claim that they care about the environment because they made plastic straws request only. By the end of these pages I aim to shine a light on those parts of the food and beverage industry that are often ignored and open a new channel of communication for those looking to create a more sustainable and environmentally friendly future society.

The First Course: The Plastic Conundrum

Since the world is so connected in the modern era by the internet, it would be legitimately shocking to discover a person that is completely unaware of the photographs and videos that are frequently shared on mainstream and social media sites showing marine life being negatively impacted by single use plastics. Of these short lived plastic products, disposable drinking straws are the ones that are most strongly associated with the food and beverage industry because fresh straws can often be found in poking out of every fresh drink that makes its way out from behind the bar. Straws, however, are not the only plastic product that is utilized in the food and beverage industry, every part of the industry from ingredient delivery to carry-out packaging is permeated with plastic.

While much of the plastic is in the form of single use disposable products that may or may not have green alternatives, there are other multiuse plastic implements currently have very few alternative options, such as cutting boards and storage containers. The existence of these plastic implements means that the conversation about plastic in the food and beverage industry needs to address the necessity of plastic and the reality of possibly moving to a plastic free future. To entirely explore this problem and produce possible solutions, the conversation needs to be broken down into its individual components. Single use to-go containers and utensils, packaging for shipping, and the multiuse tools all have their own distinct points that need to be considered and moving forward I will discuss them separately.

A Base of Single Use To-go Containers & Utensils

Plastic drinking straws are arguably the most notorious piece of single use plastic in the food and beverage industry. The media is littered with images of sea life being negatively impacted by straws, and I occasionally heard phrases like “save a sea turtle and skip the straw” from patrons at my bar when someone in their group asked for a straw after the “straw ban” in California went into effect, but straws are just the tip of the proverbial plastic iceberg. The food and beverage industry is littered with the carcasses of convenient single use packaging that once held the remains of an unfished meal or an entire feast for a night in free from cooking and the disposable utensils necessary to consume that feast. While to-go containers and utensils come in a multitude of shapes and styles, like the familiar plastic box fastened by little snaps, foam soup and sauce containers guaranteed to keep warm liquid on the inside, and Chinese take-out boxes that hold delicious sesame chicken within their folds, but the thing that they all have in common is plastic.

These containers and utensils are meant to be used once then disposed of, it is necessary to make them from materials that are inexpensive, easy to produce, and will not fall apart when exposed to moisture. Plastics check off all these boxes, and in the case of Styrofoam, even adds the benefit of keeping food warm, which makes them the obvious choice for disposable containers and utensils. Not only do plastic containers adequately fulfill the purpose of transporting food and drink, since they are inexpensive to produce, restaurants and bars are able to purchase them in bulk without suffering massive losses in profit or needing to offset the cost by increasing the prices on their menus or charging for to-go containers.

This affordability of single use containers and utensils made from plastics is part of the cycle that results in plastics polluting ecosystems around the globe and the photographs of sea turtles with straws stuck in their noses that go “viral” on the internet. Since these items are complimentary, they are given at no cost to the consumer (in this case the restaurant or bar

customer) and are essentially just an extra that comes with a meal upon request that can be disposed of without the loss of something that holds value. While those containers and utensils certainly hold value, in the sense that they were manufactured and sold to the establishment to then be provided to their customers, in the food and beverage industry it is the food and beverage that actually has value at the consumer level, not the plastic containers.

While it may not seem like disposing of the containers from a takeout meal from one's favorite establishment will impact the world in any major way, that is just one container and one drop in the proverbial bucket. According to the United States Environmental Protection Agency (EPA), plastics made up 12.20% of the 292.4 million tons of total municipal solid waste (MSW) generated in the year 2018. In other words, of the 292.4 million tons of MSW generated in 2018, about 35.7 million tons was made of plastic. Of course, not all that plastic is from mealtimes long past, but these single use containers do contribute to the plastic waste that gets tossed into the garbage bin without a second thought.

It is important to note here something that it may look like I have been ignoring, and that is the fact that most plastics, like those that make up the disposable containers and utensils, are recyclable. While yes, in general plastics are recyclable, it gets more complicated when we begin to consider relatively small items like straws, and food residue that contaminates the cast aside to-go container. Small items like straws tend to clog the machines that breakdown plastics to be recycled, and food residues require the plastics to be cleaned prior to beginning the recycling process to avoid contaminations in the final products. Because the small items and those covered in food reside present problems that require time and money to solve, recycling companies generally dispose of these items and omit the problems all together, meaning these plastics end up destined for the landfill regardless of which bin originally held them.

Once again looking at the numbers reported by the EPA, we see that of the 292.4 million tons of MSW generated in 2018, only 69.1 million tons, that's approximately 23.6%, was recycled. It is reasonable to expect the majority of the MSW that was recycled to be plastic since we see the familiar recycling arrows on plastics so often, but that sadly is not the case. Of the MSW that was recycled in the United States, only about 4.47% (4.30 million tons) was plastic, and this accounts for about 12.0% of the total plastic MSW. The harsh reality these numbers lead us to is that most of the plastic we throw out when we finish a meal does not end up recycled even if it was placed in the recycling bin.

So where did the plastic go if it wasn't recycled? A small portion of the plastic, about 5.63 million tons went to disposal by combustion with energy recovery, while the rest ended up in landfills. Of course, the numbers reported by the EPA are approximations and do not take into account the garbage that never makes into an appropriate disposal container, but they do highlight the problem that more plastics are being tossed aside every day. Single use containers and utensils, however, are not the only plastic waste generated by the food and beverage industry that contributes to these numbers, and so we must move on to the next source of plastic waste generation.

Notes of Packaging

Plastics are also used for the packaging that protects everything from a choice cut steak to a lowly straw for shipping from the supplier to the restaurant or bar. This plastic is not as obvious as the boxes with the handy little snaps, instead it primarily comes in the form of bags and wraps that keep the items within fresh and/or sanitary. To be frank, all these packaging plastics can also be found in a local supermarket since the food and beverage industry does not use a special

packaging for their ingredients. The main difference between the packaging disposed of by a restaurant and that of an average household is the sheer amount, which makes sense since I don't personally know of any average family that goes through several dozen steaks in one night.

Why are plastics the go to for packaging food and other items for shipping? The answer to this question is almost identical to why plastics are the material of choice for to go containers and utensils, they are inexpensive to produce while fulfilling the intended function. It would be unreasonable for the packaging for a piece of food to breakdown if it was exposed to moisture because that would expose the item to contamination, or be so expensive to produce that the price of the item had to be drastically increased to cover the cost, so once again, plastics fit the bill. Even items that come in carboard containers, like some premade broths for example, are not free from plastic because not only is the resealable cap on top of the carton plastic, but there is usually a very thin plastic coating on the inside of the package for waterproofing.

Plastic and shipping are so thoroughly entwined that it is not just the food items that come wrapped in plastic, it is almost everything that the food and beverage industry requires. Silver wear is shipped with every single fork, knife, or spoon individually wrapped in little plastic bags inside their boxes, and the single use items like the boxes and straws are all protected by plastics bags inside their sipping boxes, though they are usually not individually wrapped. Of course the logic behind this excess plastic is to keep these items sanitary during shipping, but the silver wear is washed prior to being presented to customers, and the to go containers items are usually unboxed then conveniently stored on a shelf for easy access. Ultimately the fate of these plastic bags is to end up in the garbage can covered in the scraps left by the customers of the day, and eventually be sent to a landfill contributing to the millions of tons of plastic waste reported by the EPA.

Finished by Multiuse Plastic Tools

It is true the food and beverage industry does utilize an abundance of single use plastic, however there is also a healthy supply of multi-use plastic tools used during the average dinner service. While it is probably easy to guess that plastic containers are used for storage, they are not the only plastic item intended for multiple uses, these kinds of plastic tools are used for everything from prep work to cleanup. The function of these tools may vary, but the thing that they all have in common is that, at least at the time of writing, plastic is the best material for the manufacturing of the tools used by the food and beverage industry. In the following paragraphs, we will explore the reasons why plastic is the chosen material for these multi-use tools.

Let's begin at the obvious starting point by discussing the clear plastic storage containers that come in various sizes helpfully indicated by color coded lids, and volume marking on at least one side. These containers are so common that they can be found in nearly any restaurant or bar, they are basic cubes with convenient handles and flat lids that seal in the contents while allowing the containers to be stacked for the most efficient use of the available space. The question here is why plastic when smaller similar containers can be found in private homes that are made from glass? The answer here is that plastic is more useful in the food and beverage industry because it is much more light weight than other materials, allowing for larger containers than can hold several gallons of something while still being able to be lifted by one person. While the smaller containers certainly could be made of glass without weight being a problem, if a glass container were to be dropped it would likely shatter where the plastic containers are more durable and "drop proof". Of course glasses break routinely during an average dinner shift, but when this happens everything in the immediate vicinity comes to a screeching halt while the shattered glass

is cleaned up to ensure there were no injuries and no glass shards ended up on a plate. Since storage containers must be both durable and light weight, plastic is the optimal material for these containers, inexpensive production is just a bonus.

The plastic tool used for prep work is the cutting board. Unlike a cutting board in an average home kitchen which is relatively small, the cutting board in a professional kitchen is often large enough to essentially cover an entire counter, but is still light enough to remove at the end of the day for cleaning. Of course, one could walk into nearly any home good store and find cutting boards made of a variety of materials such as wood, glass, or stone that would be perfectly functional in a home kitchen, each of these materials has a distinct disadvantage in a professional setting. Wood and stone are both porous and can house harmful bacteria that can end up in the food being served even with regular and thorough cleaning. Glass, despite being sanitary with proper cleaning is heavy and prone to chipping if a cook is overzealous with their chopping (it is also worth noting that stone presents a similar problem). Plastic, in contrast to the other materials, does not house harmful bacteria, maintains a manageable weight, and does not readily break down when exposed to regular wear and tear, making it the cutting board material of choice for the professional setting.

Of course, once the shift is over, the evidence of a long day must be cleaned up, and once again, multi-use plastics are used to facilitate this process. While during storage and prep work, plastic primarily made up a specific tool, during the cleanup phase, plastic tools perform multiple functions. Not only are plastics used to make light-weight bus tubs that neatly corral dirty dishes until they are sent to the dishwasher, they also are the material used for the baskets that hold the silverware and the racks that carry the dishes through the dishwasher. Like the storage containers and cutting boards, these cleaning items need to be both light weight and durable so that they

won’t easily break but can still be lifted by a single employee when full. While metal containers may seem like a possible alternative, they are heavy and may break the plates if handled too carelessly, meaning plastic is both lighter and safer for the dishes.

In all three areas where multi-use plastic tools are routinely used in the food and beverage industry, storage, prep, and clean up, we see that plastic is the best choice of material. Plastic is more sanitary, light weight, and easier on breakable flatware than other materials. In addition to these benefits, plastics are also inexpensive to produce meaning that the finished products are inexpensive for the business to purchase.

The Second Course: The Food Waste Problem

Plastics get most of the media attention when waste from the food and beverage industry is discussed since discarded plastics can easily be seen negatively impacting the environment. However, there is another type of waste generated within the walls of every establishment that serves food and drink to their patrons, and that is food waste. Of course, like plastic waste, food waste cannot be blamed entirely on the food and beverage industry, however, the origin of the waste is not specified so the industry can be considered one of the primary sources of food waste. According to the EPA, approximately 21.59% of the 292.4 million tons of the MSW generated in 2018 was food waste, or about 63.1 million tons with about 55.9% ending up in landfills with the rest being composted, combusted, or undergoing "other management". While food waste may not seem like a big problem like plastic waste, the decomposition of food waste releases both chemicals and greenhouse gases into the environment.

At this point, the appropriate question to ask is "where does the food waste in the food and beverage industry actually come from?" While this question may seem simple to answer, there is more involved in the generation of this waste than unfinished meals being scraped into rapidly filling trash cans in the kitchen. To solve this food waste mystery, we must identify the two areas where food waste is generated, the "front of house" and the "back of house", and the unique factors that contribute to the waste generated in both locations.

Front of House Waste Seasoned with Social Pressures

The areas where the patrons can be found enjoying their meals such as the dining room and the patio are known as the "front of house" in the food and beverage industry. In these front of

house locations, food waste is generated directly by the customer when they do not eat every scrap of food on their plate or garnish perched upon the rim of their glass. Whenever these forgotten remnants of a meal are left behind, they must be discarded in one of the large trashcans in the kitchen as soon as possible as that is the only hygienic option for scraps that have been collecting germs in the front of house. While most of the time it is scraps that come back to the kitchen to be laid to rest in a trash can, it is important to note that on occasion entire meals that are largely untouched are discarded in this manner, these plates have been sent back for one reason or another, and must be disposed of properly to comply with health codes. For the remainder of this discussion, we will largely ignore the fact that entire meals are occasionally discarded since it is an unfortunate reality of the food and beverage industry that sometimes the customer just won't like what they ordered and will send it back in favor of something they find more palatable.

The thing that is likely both the most obvious and largest contributing factor to front of house food waste is the size of the portions being served in any establishment. Across the United States (and to a lesser extent in other countries) restaurants and bars serve up gargantuan portion sizes to their customers that the average person will be unlikely to finish in one sitting. To put it bluntly, this is a wasteful practice even if the menu options that are meant to be shared are considered as it necessarily generates waste when the meal is left unfinished. However, there is a reason why restaurants and bars serve up large portions, their customers must feel like the money they are paying is justified or they will leave unhappy and be very unlikely to return. In general, customers want larger portion sizes for less money, and to maintain a profit prices and portion sizes must be carefully balanced to ensure happy, repeat customers.

Of course the unfinished portion of large meal can easily be packed into a to-go box and sent home with the customer to be reheated and eaten at a later time which does reduce the food waste, but customers are not always inclined to ask for a box. It turns out that the seemingly simple task of asking one's server for a box is not as simple and can be influenced by the social situation. In some cultures it is taboo to ask to take leftovers home, which means that in these cases anything unfinished is destined to be thrown out so the customer can leave with their reputation free of a doggy bag sized blemish, but even where to-go boxes are common they are not always requested.

Since it is more common for people to dine with others, so the social setting heavily influences the desire to request a box. A customer more formal gathering like a business luncheon will be less likely to request a box for their leftovers than one in a casual outing with a couple of friends to avoid potential embarrassment. Of course, if the server is to offer containers when they notice that eating has slowed down at the table, customers are more likely to take their leftovers with them regardless of the setting. The other major factor that may influence a customer to request a box even in a more formal setting is their personal level of concern for the environment, but this is entirely subjective. No matter what the reason may be, if a customer does not take their leftovers home with them, they will contribute to food waste production.

A Side of Back of House Waste

Similar to how the phrase "front of house" describes all of the areas where customers can be found, "back of house" is used to describe all of the areas where customers are prohibited in a restaurant or bar. These areas include things like storage rooms, the kitchen, and the area behind the bar where drinks are prepared. Except for storage rooms, these back of house locations also

generate food waste, however that generation may be less obvious than in the front of house. For simplicity, we will split the back of house into the kitchen and bar to identify how food waste is created in each of these locations.

While it may seem strange to think of a bar generating back of house food waste, it is important to note that all of the lime wedges, olives, and other fruits that decorate the rims of glasses must come from somewhere. At the beginning of any normal day in a bar or restaurant one of the first tasks any bartender (or barback) must complete prior to opening is prepping their garnishes for the day. Usually this entails cutting various fresh fruits, picking mint leaves, and portioning out various preserved items like olives that may or may not get used up by closing time. In most establishments, anything that is left in the little plastic cups that hold garnishes at the end of the day must be thrown in the garbage and the next day will start the process all over again. Unused garnishes will also be thrown out throughout the day as mistakes are made and corrected. While it is wasteful to throw out unused garnishes, it is an unfortunate necessity to ensure that fresh fruits are always being used, and bacteria is not being allowed to collect and spread throughout the dining room on old lime wedges.

While unused garnishes are a problem in the kitchen, food waste is also generated by prep work, experimentation, and spoiling of unused ingredients. In the kitchen prep work can be anything from cutting garnishes to trimming the excess fat off pieces of meat, and generally generates the least kitchen food waste. A well-run restaurant or bar will usually have very little waste generated by the spoiling of ingredients, but it is not always possible to order the perfect amount of product for the week, and it is almost inevitable that some will spoil and need to be thrown out. Experimentation is what produces the most food waste in the kitchen because as the

cooks create new dishes for menu consideration, nearly full plates are ultimately discarded with just a few bites taken out for taste testing.

In both the bar and the kitchen food waste is generated daily, and the actual amount fluctuates based on how busy it is on any given day. While it is wasteful to throw out unused garnishes, it would be irresponsible to use old product and risk the spread of diseases in the dining room. Ultimately, a well-run establishment will generate very little back of house food waste when compared to the waste generated in the front of house.

The Third Course: The Supplier Situation

At this point, we have explored how plastic and food waste are generated in the food and beverage industry, but in order to complete our discussion we must examine how the suppliers that fuel the food and beverage industry impact how environmentally friendly the industry is as a whole. While supply could be broken down into ingredients and utensils, we are going to focus entirely on the ingredient suppliers because most of the waste produced by the utensil suppliers falls into the plastic waste category. It is also important to note that the vehicles used for shipping create pollution, however, we will not be discussing this it is not a problem exclusive to the food and beverage industry.

The two largest restaurant suppliers that dwarf the competition in such a way that they are irrelevant to our discussion are Sysco and U.S. Foods®. Both of these leading companies are approximately four times the size of the next largest competitor, so by focusing on their practices we can gain a fairly good understanding of the practices of the companies that supply the food and beverage industry with fresh ingredients. It may be easy to assume that the next few paragraphs will paint a picture of unsustainable agricultural practices and the decimation of wild fish populations, but I was pleasantly surprised that my research found that both Sysco and U.S. Foods® have made public commitments to sustainability. Despite their promises, however, one company (Sysco) has been more transparent with how they are meeting these goals, and there are still areas where both companies may or may not fall short of sustainable practices at the present.

Since Sysco has been the most transparent with their sustainability goals we'll focus on their specific plans and practices first. According to their website, Sysco's current primary focus is to make their Sysco Portico Brand of seafood 100% sustainable, and they have partnered with

World Wildlife Fund (WWF) to achieve this goal. According to the most recent ten-year report, this goal has been almost met, and through the partnership with WWF, Sysco is shifting their focus to include outreach to improve aquaculture and fishing practices globally beyond their own brand. Sustainability in the aquatic world, however, is not where Sysco's commitment ends, they are also publicly committed to fostering sustainable agriculture. According to a yearly report released on their website, they have partnered with their suppliers and organizations like WWF to improve sustainable agricultural practices in both the rearing of livestock and the growing of crops.

Like Sysco, U.S. Foods® is publicly committed sustainably sourcing the seafood that they provide, but they did not go as far as partnering with WWF and producing a ten-year report on their progress. Instead, they have managed to obtain a certification indicating their seafood is sustainable through the Marine Stewardship Council and provide about three short paragraphs describing their practices on their website. Like their sustainable seafood page, their agriculture pages emphasize a commitment to sustainable practices both in the livestock and crop categories, and their products boast certification by the Rainforest Alliance.

Both Sysco and U.S. Foods® are committed to sustainable practices and have obtained sustainable certifications for their efforts, the main difference is the amount of information they provide about their efforts. It is no secret that the modern agriculture and fishing industries are known for unsustainable practices, but with these large corporations that dominate the supply world we are likely to see the positive impacts of their commitments. While these are still large corporations and any information sourced from their websites must be taken with the proverbial grain of salt, these are still necessary steps in the direction towards a more environmentally friendly future.

Possible Substitutions: A Way Towards A Greener Future

At this point, our discussion has focused primarily on the problems that make the food and beverage industry less than environmentally friendly, and we have yet to explore any possible solutions. Of course, the one exception is that the leading suppliers are taking sustainability into their own hands and actively working to shift that realm towards more environmentally friendly practices. This leaves the problems presented by plastics and food waste to still be solved, and while all the answers may not be found here, there are a few possibilities that are worth entertaining. For our purposes, we will once again break plastic and food waste into their own sections to explore what can be done about these problems.

Solving the Plastic Conundrum

Before we can discuss the solution to plastics, we need to note that conventional plastics are made from fossil fuels, take a very long time to break down, and pollute the environment when they find their way out of containment. Plastics are also light weight and inexpensive to produce, which is why they are the material of choice for the disposable items that we previously discussed. But, in 2019 when I visited Yosemite National Park I noticed the words "Compostable" and "Commercial facilities only, that may not exist in your area" printed on the side of the disposable cup containing my soft drink when I stopped for lunch. These few letters on the side of a cup that I had assumed to be conventional plastic lead to me noticing that nearly every disposable item in site was labeled "Compostable" indicating that perhaps the plastic problem is closer to being solved that I initially thought. Unfortunately, I have concluded that the solution is not as simple as compostable cups.

It is true that compostable and biodegradable plastics are beginning to be produced and used in some places, like Yosemite National Park and on university campuses, but they are far from taking over the food and beverage industry to go shelf. Both compostable and biodegradable plastics are primarily plant based so are they lightweight, and fairly inexpensive to produce, why then, are they not being more widely used? The answer to this question lies in how these plastics, specifically compostable plastics, must be disposed of since they are plant based and cannot be processed by the same recycling plants as conventional plastics. While biodegradable plastics will breakdown without aide, compostable plastics require a certain amount of heat through composting, and there are only a small number of facilities currently operating that can process these items. In areas where facilities than can process compostable plastics are unavailable, these items end up in a landfill along with all the other waste generated and will likely never receive the proper heat to breakdown entirely.

Of course, to-go containers and utensils are not the only things that generate plastic waste in the food and beverage industry, there is also the problem of plastic packaging. While biodegradable and compostable plastics are suitable for temporary containers and utensils, there is a problem when trying to use them for long term storage on shelves or during shipping, they tend to break down. The moisture in the products they are tasked with containing causes these plant-based plastics to begin the decomposition process, resulting in leaks and spills that would be avoided by using conventional plastics. There is research being done to solve this problem, but research is expensive and continuing the use of conventional plastics is affordable.

What to do About Food Waste

While the plastic problem can be solved with scientific advancements, the food waste problem is primarily a social. Recall, food waste is generated in both the front and back of house, but in general, the back of house is efficient and generates little extra waste meaning that the front of house is where food waste must be addressed. In the front of house, food waste primarily comes from unfinished meals due to a combination of large portion sizes and social pressures that make a customer less likely to ask for a to go container for their leftovers. The only real solution here is destigmatizing the act of asking for or accepting an offered to go container and normalizing smaller portion sizes at restaurants and bars.

Shifting social perceptions of to go containers and portion sizes is most definitely a tall ask because it cannot be done by simply introducing a new piece of technology. Appropriately training waitstaff to always offer a to go container at the end of a meal and outreach campaigns aimed at erasing any stigmas around taking leftovers home can likely solve part of the problem, however some situations may never fully shake the shame. Portion sizes present a more difficult problem because customers become upset when they feel like they are not getting everything they paid for. In general, larger portion sizes result in more satisfied customers that are likely to return, while smaller portion sizes tend to drive customers away. Realistically, the food waste problem can most likely be best solved by normalizing taking one's leftovers home.

Individual Action

At this point, it may seem like the only ways to shift the food and beverage industry towards a more environmentally friendly future must be done at the corporate level, and there is little that can be done by the individual, but that is not entirely true. The evidence of the impact of individuals impacting the food and beverage industry can be seen in the actions of the suppliers,

and it is doubtful that large corporations like Sysco and U.S. Foods® would funnel resources into sustainability efforts if it was not popular among consumers. By keeping this in mind, individuals can harness their power and advocate for more positive changes in their favorite restaurants and bars.

One can reduce the food waste at restaurants by ensuring that they ask for a box when they do not finish their meal and encourage the rest of their party to follow suit. Plastic waste can be reduced by carrying reusable straws or abstaining from using straws all together and supporting policies that will increase the use of compostable and biodegradable plastics when possible. While the food and beverage industry may not be environmentally friendly in the immediate future, by working together one action at a time a sustainable future is entirely possible.

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