

Mi Ofrenda

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Abstract

This thesis examines the role of the Dia de los Muertos holiday in wasteful spending, food waste, and environmental waste in the United States due to its food-centered traditions and commercialized competitions. As the holiday has become more mainstream, the once-homebound practices have expanded into large, drawn-out festivals nationwide. Articles on the holiday's traditions, as well as studies on waste, have been reviewed. The analysis showed that the traditions have evolved and that food waste directly affects financial and environmental waste. This paper concludes that the holiday's practices can be adjusted to help reduce food, financial, and environmental waste.



Chapter 1

Introduction



Introduction

Research Problem

In the US, trending Latin American cultural death celebrations result in wasteful spending, food waste, and environmental waste through food-centered traditions and commercialized competitions.

Research Statement

This thesis will examine the origins of the Dia de los Muertos holiday traditions, how the practices have become increasingly commercialized in the US, and whether or not altering them to have a more positive impact is possible.

Background

As a Hispanic, I grew up with the Dia de los Muertos holiday, attending local festivals, purchasing merchandise, and setting up altars, as did many of my family members. One such holiday season, a cousin of mine shared images of her ofrenda. Under a framed photo of our grandfather, she displayed a small bowl full of sunflower seeds as we remembered

him always having bags of them around. After thinking of how sweet the offering was, my next thought was what she would do with all those sunflower seeds. After personal reflection, I realized that if it were me, I would throw out the entire bowl full after the holiday ended since I don't particularly care for sunflower seeds and wouldn't eat them, and that made me feel like a terrible person. It had not occurred to me until that moment how much food we waste with this tradition, even after having discarded so much food myself years prior. Thinking back to the heavily populated festivals and how large the Hispanic community is, I concluded that I couldn't be the only one wasting food and money on that edible discarded food each year. This realization led me to the topic of this thesis, as I wanted to

know exactly how much food we were wasting and whether that was having any significant environmental impact.

Preconceptions

As someone who has participated in the tradition of Dia de los Muertos, assembling an altar with food offerings and then discarding the still edible food once the holiday is over, I have my preconceptions that most participants similarly toss out their food items and create unnecessary food waste. After casually reviewing this subject in forums, I expect the research to reflect this issue, with the data to confirm.

Knowledge Gap

While there is plenty of research on food waste and its environmental impact, none of the studies found any holiday to be a direct cause of the issue. Thanksgiving is known as one of the more indulgent US holidays with leftovers

as a given. However, one tradition of Dia de los Muertos has its participants buying food for a dish, preparing it, and leaving it out for the deceased "to enjoy" from a few hours to the entire two-day holiday period, to be most likely thrown out afterward. Additionally, there is research on the origins of the holiday in general and how the altar and food traditions may vary slightly depending on location, but very few studies elaborate on the aftermath or long-term adverse effects of such practices. There are varied accounts on whether or not dishes for the deceased are consumed, and mentions of supplies for altars do not consider the average household income or what percentage of that income is dedicated to the traditions. These gaps in the literature must be addressed to assess what additional research still needs to be done on this topic so that a solid foundation can be formed upon which to work to create substantial long-term change.



("Pan de Muerto" Designed by Freepik)



(“Pan de Muerto” iStock.com/hayaship)

Chapter 2 ***Research***



Research

Rationale

The Dia de los Muertos holiday in the US has moved away from its modest Mesoamerican origins to an all-embracing and commercialized cultural event celebrated across the country dotted with elaborate altars and dishes shared among family, friends and, most importantly, lost loved ones. However, there needs to be more insight into the waste generated by these traditional holiday practices, specifically food, financial, and environmental. Altar or ofrenda competitions can lead to excessive spending, favored dishes left out for the deceased often go uneaten and trashed, and food waste impacts greenhouse gas emissions. Understanding the wasteful impact of these holiday traditions is critical to developing effective long-term solutions to minimize waste, reduce spending, and preserve the environment while still honoring the heart of the traditions. This thesis research aims to narrow down how much waste in the US is specifically created by the Dia de los Muertos holiday and how those issues can be addressed and resolved.

Stakeholders

The proposed solutions to these wasteful practices will affect those in Chicano and Latino communities in the United States who celebrate the Dia de los Muertos holiday. Organizations that put these large-scale celebrations together, such as Self Help Graphics & Art in Los Angeles or Galería de la Raza in San Francisco, will have to modify the way they organize and produce their festivals in the future to be less wasteful. Local city councils

will benefit from the modifications as they aim to reduce or eliminate unnecessary waste in their districts.

Research Methods

Primary Research

The primary research provides essential information on food waste statistics, the waste's impact on the environment, and the economic aspect of the holiday. It also provides insight into the origins of the holiday based on location and religious rituals, as well as how it has evolved and is celebrated in contemporary times. This information helps to form a foundation of facts about the holiday and its participants and whether there is room for positive change.

Case Studies

Case studies were conducted to determine what type of campaigns have the most impact and success at waste reduction in food, financial, and environmental areas. These studies were also used to identify any common strategies used throughout the campaigns for this thesis and its proposed solutions.

Visual Analysis

Visual analysis of the selected campaigns in the case studies was performed to identify what type of visual campaigns have the most impact on waste reduction at the consumer level.

Literature Review

Issue 1: Food Waste

Statistics

Food waste in this situation has the most significant negative impact of the three issues this thesis focuses on, as it also has a considerable effect on environmental waste. A 2012 article by Heta-Kaisa Koivupuro et al., "Influence of Socio-Demographical, Behavioral and Attitudinal Factors on the Amount of Avoidable Food Waste Generated in Finnish Households," found that avoidable food waste, or food that was edible prior to being discarded, averaged to about 139 pounds per household or 51 pounds per person (185). In Marie Mourad's 2015 article "THINKING OUTSIDE THE BIN: Is There a Better Way to Fight 'Food Waste?'" she estimated that retail and consumer food waste cost the United States around \$165 billion a year and that roughly 17 million Americans were food insecure at the time (27). Additionally, her study found that up to 133 billion pounds of food per year never get eaten, and 95% of food waste ends up in landfills (28). The article also pointed out that a majority of the responsibility for food waste fell onto consumers, who were estimated to account for up to 50% of the waste (27). In Violeta Stancu et al. 2016 article "Determinants of Consumer Food Waste Behavior: Two Routes to Food Waste," they also made the connection that about 50% of food waste was generated at the household level, especially in high-income countries (8). Furthermore, they discovered in the UK that about 65% of that household food waste was avoidable (8). In 2017, the statistics have only increased, as reported by Bonnie

L. Smith in "Heat Up Those Leftovers, Not the Planet: How Combatting Food Waste Can Affect Climate Change." She found that 17.4 million American homes were food insecure (650). Her study equated the amount of food Americans discard every year to fill 730 football stadiums and that 98% of this discarded food ends up in landfills, an increase of 3% from two years prior (648, 651).

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Americans can fill 730 football stadiums with discarded food every year

According to Feeding America's latest food waste statistics based on estimates from 2019-2021, nearly 40% of all food in the United States is generally wasted, equating to 119 billion pounds, 130 billion meals, and more than \$408 billion each year. They also estimate that 34 million people in the United States are currently food insecure, an increase of 16.6% over two years. Estimates from 2019 via ReFED, a national non-profit that uses data-driven

solutions to fight food waste, found that about 50 billion meals went uneaten on the residential level, with 11.1% being categorized as “prepared foods.” Those meals equal about 21.1 million in food waste tons, with prepared foods making up 2.47 million tons and 67.6% ending up in landfills. The surplus food was valued at \$158 billion on the residential level, with prepared foods making up \$38.4 billion. The USDA further explains that safe and wholesome foods that are thrown out can help feed hungry people and reduce food insecurity. They estimate that programs like Feeding America rescue around 3.6 billion pounds of food every year.

Food Waste Sources

Broad Consumer

Koivupuro and others’ 2012 research admitted that studies on food waste were challenging due to the various methods of measurement as well as the types of food materials included and excluded. Their two-week study was based on analysis by third-party waste screening, data collected directly from the consumer via food diary, and background questionnaire. They were able to find clear correlations with avoidable food waste in terms of “size of household, type of household, gender of person mainly responsible for grocery shopping, household view of potential to reduce food waste, appreciation of low food prices, and respondent’s view of the effect of purchasing the most appropriate package sizes” (186). They found that households of single women generated the most avoidable food waste per

person, significantly more than family and adult households. Additionally, that amount was higher in households where women were responsible for the grocery shopping than in households where men or both spouses were responsible. Also, households that thought of money as no object wasted more food than those who found it essential due to frugality or shortage of money. A socio-demographical factor they found to have a clear correlation to food waste was the number of occupants per household, with more people resulting in more food waste. Although the researchers pointed out that gender could play a “considerable role” in the causes of food waste, their data could not establish why women, in particular, had such a significant impact. A study in Austria, mentioned in Koivupuro’s article, also found that full-time employment, higher education, and younger age positively affected the amount of avoidable food waste in households. A British study linked food waste to spoilage, leftovers, and out-of-date food. The respondent’s questionnaires from the original study concluded that “poor storage management, buying too much, cooking or serving too much and not re-using leftovers” were critical factors in avoidable food waste (190). Factors such as household size and who purchases and prepares the food could apply to further research for the thesis concerning food preparations for the Dia de los Muertos holiday traditions (Koivupuro et al. 186-190).

Stancu’s 2016 research also admitted that there was little evidence regarding consumer food waste behavior. Their study showed that the main drivers of food waste were cooking

too much food and purchasing too much food. They found that an estimated \$936 in the US was used on food purchased but not eaten per household per year. Their study also found that household economic factors such as time and money significantly impacted a person’s aversion to food waste. In addition to these factors, their study attributed behavioral intention as a driving force behind food waste, citing the “Theory of Planned Behavior” determined by the consumer’s attitude toward the behavior, their subjective norms, and their perceived behavioral control as an essential step of a household’s food provisioning process which could become routine over time through repetition. Similarly to Koivupuro’s research, Stancu attributed household size as well as income and age as significant correlations to food waste, concluding that lower amounts were associated with fewer household members and lower income, but in contrast, found that older consumers instead of young ones led to less waste (Stancu et al. 9, 14). These statistics and findings lead the thesis in the right direction as the aim is to prove that the food purchased and used for the Dia de los Muertos holiday goes uneaten and wastes money; however, the data is too broad as it covers the whole year rather than the short timeframe around the holiday.

The same 2019 data from ReFED found several causes of food waste, including 25.4% being spoiled food, 16.3% of people didn’t want leftovers, and 7.6% of food was left out too long. While these particular factors can be directly applicable to the thesis issue, they again cover a year’s worth of input with no indication of a

rise in levels over any holiday period.

Cultural & Traditional

One study states that “culture is known to play an important role in food waste behavior” (Stancu et al. 15). There are conflicting accounts for the aftermath of food used during the Dia de los Muertos holiday due to cultural or traditional practices. In Stewart Cohen’s 1992 article “Life and Death: A Cross-Cultural Perspective,” he finds that the food offerings in Mexico are consumed by family, distributed among relatives, given to neighbors and friends, and placed on graves. There is no elaboration on what is done with the food after it is placed on the graves. A 2023 article by Janet Long-Solis and Luis A. Vargas, “Mexico: Day of the Dead,” also mentions that in Mexico, food is placed upon the graves of loved ones but then explains family members consume it. Michael R. McDonald states in his 2023 article “Central America: Day of the Dead” that families in Central America set out baskets of cooked food in the center of their homes for the dead to enjoy, which is later eaten by the living. Research done by Brito Benítez, Eva Leticia, and Heajoo Chung for “Food for the Soul: Eternal Co-Existence in the Mayan-Catholic Traditions of Pomuch, Mexico” found that the people of Pomuch eat their dishes after prayers and distribute the rest of the food to visitors during the holiday (82). In Santa Elena, Ecuador, as noted by Efrén Silva Gómez et al. for “The Table of the Dead at the Celebration of the Deceased in the Ecuadorian Coastal Lowlands Region,” the holiday’s ceremonial gatherings involve the consump-



tion of special foods as well as giving food as a gift. Their tradition of Muerteo is that family and friends dine together and prepare about five different meals for a long day of visitors from neighboring communities going house to house to join these family feasts (5-6, 8). Margarita de Orellana's "Day of the Dead Ritual Serenity" mentions a Tamale Feast held during the Aztec year, where a tamale was placed on every grave to honor the deceased and then eaten afterward (69-70).

Along with the differing practices of whether the living eats the food, there are opposing beliefs to how the food is "consumed" by the deceased. In a 1997 study by Stanley Brandes, "Sugar, Colonialism, and Death: On the Origins of Mexico's Day of the Dead," he was at one point stopped from accidentally grabbing a banana from an altar because it was "for the deceased," and instead told to take one from a different area (276). The research by Silva Gómez described the Table of the Dead ceremony in Tugaduaaja, Ecuador where families pull a curtain around the table as to not interrupt the deceased from tasting the food left out for them (Silva Gómez et al. 5). Brandes recalls from his research that Mexicans do not believe that the souls of the dead eat the food. However, an interview with Cándido Reyes Castillo from Brandes' observation of the holiday states that he is sure the dead return because when they "offer food to the deceased, it loses its aroma and taste" (Brandes 276). De Orellana's study of outlying Mexican villages found various traditions regarding food, including locals placing offerings in corners of cemeteries for souls with no relatives to

visit them or glasses of water placed at altars for the dead to quench their thirst from their long journey. Most notably, a village elder she interviews explains, "The villagers often comment that when they place the bread on the altar, it weighs more than when they take it away, or how the food removed from the offering has no flavor...That happens because the dead feast on the spirit of the food; they take away its essence; that's why we don't eat it afterwards" (De Orellana 72-78).

Issue 2: Financial Waste

Commercialization

In late 2017, Disney's Pixar released the movie, "Coco," which was marketed heavily leading up to the release and coinciding with the Dia de los Muertos holiday in early November. James F. Peltz examined this newfound hype around the holiday in his 2017 Los Angeles Times article "Dia De Los Muertos Gets the American Holiday Treatment: Commercialization." Speaking to National Retail Federation spokeswoman Ana Serafin about how movies like "Coco" impact a culturally specific tradition becoming mainstream, she pointed out that "Movies influence what a lot of people want to dress up as on Halloween." Peltz found that retailers like Target and Party City grouped Dia de los Muertos merchandise with Halloween since the holidays are next to each other. Beistle president Tricia Lacy confirmed this pairing, stating, "There's no practical way to wait until Halloween because they're celebrated one right after the other." President of Party City's retail division, Ryan Vero, stated that

Dia de los Muertos merchandise "has been a popular style" since they began carrying the products in 2014. In 2017, it was estimated that nearly 180 million Americans were expected to spend \$9.1 billion on Halloween, which was a 32% surge from 2015 (Peltz). De Orellana noted that in Central Mexico, merchants and artisans shifted from creating decorative objects, such as skull figures, for offerings to selling them at markets due to the interest of buyers and agents. She states that there has been an "explosive reinterpretation of semantics that turns the cult of death into the cult of spectacle...for the last few years, the urbanized image of death has tended to lose its ritual meaning in order to re-create itself. Ritual craft has become decorative folk art, to be collected and exhibited" (De Orellana 80). Retailers are not the only ones benefitting from the mainstream popularity of Dia de los Muertos. Museums have also reaped economic rewards from the crowds they attract to their Day of the Dead exhibits, according to Regina Marchi in "Hybridity and Authenticity in US Day of the Dead Celebrations." However, they give back by hosting functions for the Latino community that educate, legitimize, and raise popularity across a large audience (Marchi 291).

However, the commercialization of Dia de los Muertos has only affected some participating areas. Kerri Allen observed this in her 2004 article "Stayin' Alive; El Día De Los Muertos: A Primer" when she spoke to journalist Mary J. Andrade, who had been chronicling Mexico's Dia de los Muertos celebrations for over 17 years (as of 2004). Andrade pointed out that

through her travels, she noticed the holiday was "more authentic" in smaller towns in Mexico "because tourism and the influence of other cultures have not changed the celebration" (Allen). This information was recently confirmed in Central America, where the celebrations "generally do not include elaborate ofrendas and are less exuberant overall than the celebration in Mexico" (McDonald). This slow acceptance of commercialization may be primarily due to tradition but also partly due to resentment. As Stanley Brandes finds in his 1998 article "The Day of the Dead, Halloween, and the Quest for Mexican National Identity," Mexicans who resent US influence over the Mexican economy and cultural scene via the popularity and success of Halloween south of the border see that holiday as representative of Mexico's failure (378).

Tourism

Communities have taken notice of Dia de los Muertos' popularity and have used that to



Inedible sugar skulls (Photo by Anna Bruce at Culture Trip)

their advantage to boost tourism and the local economy via elaborate festivals. In an article from Mexico News Daily, “Day of the Dead Tourism Predicted to Make over 37 Billion Pesos,” the author discussed the revenue the holiday was predicted to generate in 2022 in Mexico. The Mexican Tourism Minister Miguel Torruco stated that tourists were predicted to spend \$1.9 billion during a 6-day festival across the country. Of that amount, 9% was expected to be spent on accommodation and the remainder divided among services like restaurants and transport. Torruco stated

Ofrendas are viewed as an element of pride and status

that 2.16 million people were expected to stay across the country during that period, just shy of the 2.27 million from their 2019 pre-pandemic celebrations (“Day of the Dead Tourism...”). Visitors would have to spend nearly \$900 each or almost \$150 per person per day over the six days to reach that estimated revenue. This estimated revenue data becomes more interesting as it overlapped

with the highest inflation rates in Mexico in two decades, as discussed in the following subsection.

Smaller local Dia de los Muertos festivals struggle to compete with week-long country-wide celebrations, not just in bringing in this type of revenue but funding their events, all while trying to keep the tradition intact. In Justin Yang’s “Raised Dead,” he discusses why the community of Olvera Street chose to raise money instead of using city funding. In 2013, the city cited a charter as the reason for a new competitive bidding process to hire merchants for the festival as opposed to funding the 9-day event as they usually did in the past. The community pushback on the bidding process was to avoid potential low bidders who lacked “cultural sensitivity and would commercialize the event.” Using Kickstarter, the Olvera Street Merchants Association Foundation raised \$12,250 of their \$18,000 goal to fund the event themselves, with most donors giving less than \$100 and a handful giving \$1000 or more. With a crowd of only about 5,000 people, the revenue brought in by this local event must be a fraction of that made by a country-wide festival like that in Mexico. The city general manager of Olvera Street, Christopher Espinosa, pointed out that while the private funding would help preserve the event’s spiritual undertones, it would be difficult to achieve every year (Yang). It could also be argued that those community members or merchants who donate to put on the event could end up contributing more than they make back.

Overspending & Underselling

While the mainstream popularity of the Dia de los Muertos holiday has raised prices on related merchandise and tourist attractions, inflation pricing has yet to deter the overspending issue. In Jacob Sanchez’s article “Mexicans Readying Traditional Day of the Dead Altars despite Higher Costs,” he looks into the inflation issue in Mexico City and how it affected the holiday and participants. In 2022, inflation in Mexico City was at its highest in two decades at 8.7%, and food and drink prices rose by 45% over the previous year. Traditional holiday food items such as pan de muerto or “dead bread” rose \$.80 a piece, reaching up to \$2 on the high end. A local flower shop raised their prices between \$.25 and .50 and estimated that more than 5 million marigolds, the traditional holiday flower, would be available for sale that year. That means that on flowers alone, vendors would see a gross profit of more than \$1 million if they were to be sold individually, starting at \$.25 each. Sanchez found that each person in Mexico City spent an average of \$80 on their altars, a 17.6% increase over 2021 and that the decorations alone made up about 40% of a participant’s holiday budget. A consensus among the retailers and vendors was that even though prices of goods rose, they did not rise high enough to affect their projections and sales negatively. Sanchez discovered that for many Mexicans, “these traditions are special and must be maintained, regardless of any price rises.” However, He also noted that many people saved their altar decorations from the previous year and only bought the necessities for their projects (Sanchez).

While some participants choose to be thrifty with their holiday decor, others see Dia de los Muertos as a time to show off. Altar competitions have become a traditional and integral celebration aspect (Brandes 375). Cities and cultural organizations hold contests for the best altar displays, with some businesses showcasing their altars as a sign of support for the holiday. In some rural areas of Mexico, participants view the ofrenda as an “element of pride and status in providing an elaborate offering for relatives,” using these expensive offerings to impress their neighbors. In other cases, it was found that farmers were “willing to sell their crops and prized animals at a reduced price in order to obtain money for the fiesta” (Long-Solis and Vargas). De Orellana had similar findings, noting that some families would try to sell their handmade goods to wholesalers for less than half of their worth to be able to afford offerings for their altar or exchange flowers for items like bread, corn, and beans due to the high importance placed on these gifts. It is also common that items like tenates (woven baskets), molcajetes (mortar and pestle), jarritos (clay jugs), and clay dishes are brand new every year (78). Even though these items are placed into everyday rotation within the household, it indeed adds up to purchase these gifts every year. In these instances, tradition and honor have taken a backseat to status as community members overspend or undersell themselves to participate and compete to be seen as those who “honor” their relatives the most.

Issue 3: Environmental Waste

The environmental waste issue stems directly from the previously discussed food waste problem of Dia de los Muertos and branches into other areas of concern. Large amounts of food waste are found to “have a severe negative environmental impact, but also social and monetary effects” as it is associated with significant emissions of greenhouse gases; wastes resources such as water, cropland, and fertilizer/fossil fuel; and contributes to a food shortage for an increasing global population. Just as food waste was found to be the most problematic at the consumer level, waste reduction at this level is “critical because the environmental impact accumulates throughout the stages of the food life cycle.” However, consumers were found to be more bothered that food waste was a waste of money rather than having a negative environmental impact (Stancu et al. 8-9). Koivupuro and others found similar points in their study as they noted that avoidable food waste was damaging in that “all the environmental impacts of producing the raw materials and processing them into food products” were for nothing, and “all the energy and resources used to produce the food have been used in vain” (183).

Statistics

According to research, the previously mentioned 98% of discarded food that has ended up in landfills decomposes and releases methane gas into the atmosphere. That food waste accounted for over 20% of methane emissions in 2017, and methane accounted for 10% of human-caused greenhouse gas emissions in the

US. Around the world, food waste accounted for 7% of greenhouse gas emissions, with each ton producing 3.8 tons of these emissions. The EPA categorizes food waste as a type of municipal solid waste, and in 2012, 251 million tons of this waste was generated in the United States. Organic materials comprised the most significant percentage of that waste, and food waste accounted for the largest percentage of organic materials at 28% (Smith 649-651). In Read and Muth’s article “Cost-Effectiveness of Four Food Waste Interventions: Is Food Waste Reduction a ‘Win-Win?’” they estimated in 2021 that around “20% of the land used, water consumed, and greenhouse gases emitted by the food system in the United States goes to produce food that is ultimately lost or wasted.” Wasted food accounted for 400-1100 m² of land, 2-9 kg of fertilizer use, 40,000-350,000 l of water, 6,000-8,500 BTU of energy, and 125-900 kg of CO₂ annually per capita.

Potential Solutions

Food Elimination

The most straightforward solution would be to eliminate the food aspect of the ofrenda if participating families are adamant about setting up the traditional shrine for their loved ones. While there may still be some cost involved in putting the altar together, removing the food feature would still impact all three highlighted issues. Consumers would spend less; the food wouldn’t risk expiring and being tossed out at the end of the holiday, thus not contributing to any more greenhouse gas emissions.

Food Reduction

As families gather to celebrate and honor their loved ones, another way to eliminate their contribution to these waste issues is to reduce the food prepared for the holiday. Following in the footsteps of many other popular holidays, participants can prepare meals intended to be eaten immediately and not set aside extra helpings for the spirits. While these holidays often see leftovers, they are typically refrigerated right away and not left out for the extent of the holiday, as with Dia de los Muertos which can last from two days to a week of celebration. If all participating families made these reductions, it would be reasonable to conclude that the overall amount of waste should also be substantially reduced.

Food Donation

To reduce food waste and simultaneously aid in another food-related issue, Dia de los Muertos participants can donate their food instead of setting it out on their altars. Consumers can still purchase the favorite foods and meal ingredients of their lost loved ones to continue that aspect of the tradition, but they can donate the consumables to food banks or food pantries to help feed the millions of people and families who are food insecure in the US. Those donations can be made under the names of loved ones as another way to honor them.

Competition Elimination

In communities where large Dia de los Muertos festivals are held, competitive components

are added to the holiday. The best ofrendas, which are grand, feature food offerings, and are densely decorated with marigold flowers and candles, are awarded. Removing this aspect from community celebrations could help limit the altars to private residences, which would likely be much smaller in scale and save the consumer money overall.

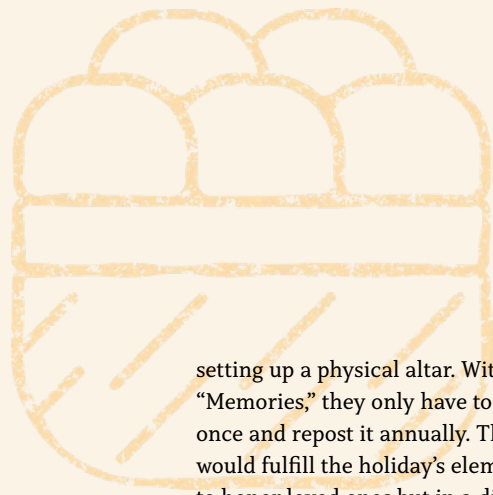
Ofrenda Elimination

While the first few ideas keep the ofrenda tradition intact, this radical alternative would eliminate it completely. We have seen a massive movement from print media to digital with birth, wedding, and death announcements as people post on their social media accounts. Platforms like Facebook even have a “Memories” reminder where users can repost such announcements every year.

Dia de los Muertos participants can post photos and stories of their lost loved ones on social media during the holiday instead of



Traditional food offerings (Photo by Gerardo Covarrubias on Unsplash)



setting up a physical altar. With features like “Memories,” they only have to create the post once and repost it annually. This alternative would fulfill the holiday’s element of a place to honor loved ones but in a digital space. It would also eliminate waste in all areas of concern since posting on these social platforms is free and involves no food.

Solution Roadblock 1: Cultural Traditions

Mesoamerican

Although there are apparent wasteful issues with some of the practices of Dia de los Muertos, there are also hurdles to resolving said issues. Tradition shows the practices running deep into Mesoamerican culture as they honor their ancestors as they have been doing for years. Brandes states, “Tradition is a conscious model of past life ways that people use in the construction of their identity,” and the holiday of Dia de los Muertos has become a key symbol of Mexican national identity (361). The holiday showcases Mexico as unique and aims to distinguish itself from its two dominating powers: Spain and the United States. He also discusses how folklore is prominent in the quest for this national identity in Mexico, saying, “Folklore often reflects popular ideas about the origins of a people. It is also believed to penetrate beneath the superficial and culturally confounding layers of modern life to some authentic core, thereby representing the essence of a people, its principal style, and values. Folklore serves nationalistic goals. Ritual and festival, in general, are of course

among the most prominent forms of folklore in this regard” (361-363). Observations of the holiday in Central America found that in each community, there were “strict standards of hospitality and millenary codes of conduct that each participant understands entirely because the laws governing that interaction are the laws of life” (de Orellana 68). The traditions are taken so seriously that in most small towns throughout Mexico with largely indigenous populations, most everyday activities are suspended during the holiday period. In Teotitlán, for example, a local explained, “No one should work while the spirits are still visiting!” (De Orellana 67-68, 75).

Following such strict and long-standing ways of living comes with consequences for going against these beliefs, including rules for the dead themselves. Long-Solis and Vargas found that in some rural areas of Mexico, the community preparations take up most of the year as the ceremony is a way to honor those who have passed. The indigenous people also believe that illness or death comes to those who do not set up an altar for their loved ones. Brandes recalled similar sentiments in his previous observation of the area, stating, “Negligent family members await punishment...This belief is invoked throughout Mexico to explain the substantial time, money, and energy invested in the two-day ceremony” (270). De Orellana discovered that “every village has its tale about a person who failed to lay out an offering with due respect and was punished by the dead. The penalty imposed may range from a flogging even to the death of the disobliging relative” (72). She also notes that

in the Valley of Mexico, physical conditions were not ideal for tombs, so the dead were cremated instead. Altars may have evolved out of necessity from stand-ins for memorial headstones. Additionally, she found that in the community on the Isthmus of Tehuantepec, they created altars for all souls, not just one person. During Dia de los Muertos, these souls are free to visit any home unless they died outside of town, where they must stay since they are then considered unwanted strangers (De Orellana 68-70).

Food has always been an integral part of the holiday traditions, as research shows that there were culinary aspects to Aztec mortuary rituals that are said to be the origins of food offerings during Dia de los Muertos. Food offerings made of amaranth dough were set out in honor of images of the deceased who died in specific ways that they could not be cremated. In their rituals, these anthropomorphically shaped food offerings could be a precursor to sugar skulls (Brandes 277-278). There is also research describing a sacred cornbread that was prepared during the month consecrated to Xipe Tótec, called cocolli, made from seeds of a “god who both embodied and heralded death,” which could be the origin of pan de muerto (De Orellana 71). McDonald noted in his study of the Mayan areas of Guatemala that the special stuffing in tamales symbolized the deceased. Benítez and others echo these findings through their observation of the Mayan people of Pomuch, Mexico, in 2015. Dishes like pibipollo were prepared by wrapping the ingredients in banana leaves to mirror the ancient Mayan treatment of wrap-

ping the dead using vegetable textiles. They drew a cross with salt and surrounded the container with nine corn cobs, which blended Christian symbolism and a representation of the nine layers of the Mayan underworld. The containers were then placed into ovens dug in the ground, a ritual called Janal Pixan, to resemble their ancestors’ burials in holes in their homes’ gardens and make offerings to the souls of the dead. On the last day of October, prepared food is offered to the visiting souls first on simple household altars. This great feast is then “brought to the graves of the dead to maintain closer contact with them” (Benítez et al. 75-76, 81).

These beliefs and traditions are amplified by the timing of the Dia de los Muertos holiday with the agricultural season of these locations and further justified by a prosperous harvest. These celebrations occur at the end of October and the beginning of November, critical times in the agricultural cycle. Researchers state that the “farmers believe that the souls of their ancestors help to generate a good harvest and therefore perform several rituals and give offerings in order to show their gratitude.” They conclude that these traditions are a way to maintain eternal coexistence (Benítez et al. 75-76, 83).

Latin American

The Dia de los Muertos holiday expanded in the 16th century to the Latin American region, where they adopted its traditions and beliefs while adding some of their own flair. Regina Marchi’s research of the holiday’s migra-

tion to the US classifies it as “folk culture” in Latin American communities and notes that the related folk belief is the “widespread conviction...that one’s well-being depends, in part, on respectfully remembering the dead... These rituals are rooted in a common sense of moral obligation to the deceased” (273-274). She continues that the holiday is a “point of cultural continuity for ethnically, racially, and economically diverse Latino populations living in the United States” (278).

In regions like the Ecuadorian coast, they too have long-standing traditions where food, drink, and belongings are key elements to their ceremonial funeral customs, as documented by Silva Gómez, who believes that “Human beings have created rituals that allow them to maintain ties with the deceased, such as memorials and anniversary celebrations”



The Aztec goddess and god of the dead (Mexicolore)

(2). In Cholula, Puebla, altars are set up with flowers, photos, fruits, dead bread, candles, water, salt, incense, and the deceased’s favorite foods. In Imbabura, communities visit the cemetery, families clean up the graves and gather around the tomb to share food. In Santa Elena, the elaboration of food is a central activity for the Table of the Dead sacred ritual that finds the families hearing noises or seeing shadows behind the curtain surrounding the table in the deceased person’s room. This tradition forms part of the identity and pride of those in the Tugadua community along the Ecuadorian coast. Preparations start days in advance as family members all pitch in to purchase ingredients for the feast and travel toward the capital to buy food that’s not found in their village. On the first day of the celebrations, the families get up early to start cooking the meals their deceased used to enjoy, ready to host and feed visitors from along the coast all day long. President of the commune, Juanito Apolinario, stated that this custom has been inherited from past generations and describes food as “the best link between the earthly world and the beyond” (Silva Gómez et al. 2-8).

As in the Mesoamerican region, local Latin American celebrations of Dia de los Muertos also relate to the agricultural cycle. Researchers note that “The intensification of both fishing and agriculture may have ensured the development of ceremonial activities, the building of alliances and reciprocal exchange” (Silva Gómez et al. 5). In Marchi’s study, she also noticed that for agricultural-based aboriginal communities in the Americas, “festivals to

honor the dead via the construction of harvest altars were held throughout the calendar year in conjunction with harvest cycles, as the dead were thought to have powers to enhance or thwart agricultural and reproductive fertility. It was believed that the spirits of the dead and the deities were always present among the living and had to be cared for on a daily basis, most especially during remembrance holidays, in order to ensure both family and community well-being” (276-277).

Solution Roadblock 2: Religious Origins

Roman Catholicism

Spain introduced Roman Catholicism to the Mesoamericans when they invaded in the 16th century, including the feasts of All Saints and All Souls’ Day. Dia de los Muertos is the “Mexican version,” or a “curious admixture of ancient Indian and Catholic beliefs and practices” (Brandes 365). However, it’s noted that although the holiday is pan-Roman Catholic, the religious celebrations are not as lavish. The activities performed and displays of Dia de los Muertos are a “folk elaboration entirely separate from liturgical requirement” (Brandes 361). Research shows that key elements of the contemporary celebration in Mexico, including family cemetery vigils, home altars, preparation of sweets, and presentations of flowers, candles, and food to the deceased, can be found throughout much of the Roman Catholic realm, including Latin America and southern Europe (Brandes 365). Cohen sees the Dia de los Muertos traditions

as important not only as a “religious experience” but also as an opportunity for “community expression in an open festival.” He believes the ancient Mexican perspective on death offers an alternative to English-speaking societies whose views differ dramatically. He also considers the celebration an outlet for the emotions accompanying loss and provides a chance for remembrance.

As previously mentioned, altars may have evolved from the lack of formal headstones in some locations, but they also have ties to the Catholic religion. Rafaela Castro’s article, “Altars,” found that home altars are religious shrines that are thought to be created as a “result of community isolation from a centralized place of worship” that can evolve over many years. She describes them as varying in size, from a small shelf with a votive candle and saint or statue, a large table with many religious images, or small chapels built on ranches for the wealthy upper class. She notes that in Mexican culture, women typically develop altars as “expressions of devotion, to pay homage to past family members, and to find a space for daily prayer.” However, the religious significance of altars has seemingly diminished as they have transformed from modest places of worship to boastful ways to show off one’s tribute to the deceased.

With the introduction of formal religion to the indigenous population, missionaries were anxious to eradicate the Aztec practice of consumable idols during the holiday (Brandes 280). This attitude is noted to have changed later as there is evidence around the 1740s that

a Capuchin friar named Francisco de Ajofrín mentioned commercial production and sale of “whimsical figurines made of the sugar paste known in Mexico as alfeñique,” prefacing the modern day sugar skulls (Brandes 363). These figurines have since become a staple of the Dia de los Muertos celebration, evolving into an inedible food product that quickly gets discarded and contributes to food and environmental waste. The religious influence is seen in other holiday practices involving food, such as placing bread and wine on graves to represent the body and blood of Christ (Brandes 282). The research also notes that from the beginning, the religious aspect has bled into the commercialization of the holiday and attributed to the food waste issue as “it was customary to give part of the food offering to the priest in return for the recital of special masses” (Brandes 378).

When the Catholic missionaries arrived in Mesoamerica, they considered the indigenous practices “pagan” and only tolerated the rituals as they found them impossible to eradicate. The traditions were relocated through religious syncretism to correspond with the Catholic liturgical calendar dates as a type of compromise. However, it was heavily skewed in the missionaries’ favor due to the dynamics of forced religious conversion (Marchi 277). The Aztecs went from celebrating over an entire month to condensing their commemoration to only two days, the death of infants on November 1 and the death of adults on the 2nd. The Mayans also followed suit with the arrival of the Spaniards, fusing elements of their ancient beliefs with Christian doctrine.

These commemoration celebrations were found to be well received by Catholics who “believed that the souls of the dead returned to bless the houses of their relatives during the evening of the first day of November, and were to be welcomed with food in return for their visit” (Benítez et al. 74-76). In addition to condensing and moving their celebration to work with the liturgical calendar, these regions have adopted Catholic beliefs and customs into their holiday season. In Costa Rica, participants attend mass and then go as a group to attend the graves (McDonald). In the Huastec Indian region of Hidalgo, it is believed that St. Michael opens Heaven’s gates on September 30 so that souls can visit the living; then, they must make their way back by November 30 as St. Andrew closes the gates. On St Andrews Day, the Totonacs go to the graveyard in the afternoon, where they bear the cross as part of their offering, and “as a farewell, they recite the rosary and sing praises to dissuade departed souls from returning to bother family members” (de Orellana 71-72).

Solution Gateway: Adaptation

Transformation

Brandes’ perspective on tradition states, “One of the major paradoxes of the ideology of tradition is that attempts at cultural preservation inevitably alter, reconstruct, or invent the traditions that they are intended to fix” (375). So even though the roadblocks mentioned are significant, there is evidence of the Dia de los Muertos holiday evolving and its participants being open to change. Even

in Mexico, Brandes admits the holiday has changed as “ideas about supposed Mexican distinctiveness undergo transformation from generation to generation in the face of the country’s enormous cultural diversity” (362). In the United States, Rene Yañez, considered “the godfather” of Dia de los Muertos, helped introduce the holiday in San Francisco in 1972 and welcomed non-traditional interpretations of the celebration from the beginning. Research suggests that because the holiday in the US has moved from folk culture into the mainstream, traditions have been altered and adapted in the process. Those who favor the changes argue that incorporating new elements into the celebration increases its contemporary relevance and “is crucial for its continued survival” (Marchi 289-292).

Religion

Even though Dia de los Muertos has strong religious ties and origins, the contemporary celebration has shied away from those roots. Marchi states, “Meanwhile, in the secular context of US society...these celebrations emerged in non-religious spheres as a form of popular culture” (274). In addition to Yañez’s San Francisco celebration, the holiday was also introduced in Los Angeles that same year. These were the first secular versions of the holiday in the US. The Chicanos who put these celebrations together wanted to distance themselves from the religious aspect as it was so closely tied to colonialism and to make the holiday more accessible to the diverse US population. However, they still incorporate Catholic and Indigenous symbolism, reflecting “Chicano

change is crucial to the holiday’s continued survival

spirituality.” The organizers’ objective in introducing the holiday to US communities was to “generate cultural awareness, ethnic pride, and collective self-fulfillment” (Marchi 280-282).

Tourism

In some areas, city officials have adapted the holiday to work to their advantage and help boost tourism. For example, in 1971, government agencies in Mexico transformed the event entirely, advertising certain holiday rituals to tourists that are now regularly practiced to conform to the anticipation and needs of the public. These practices have been accepted by and benefit communities as they earn substantial income from the influx of tourists (Brandes 368-369). The tourism numbers have increased to tens of thousands because of the acceptance of these invented rituals. For example, the 1972 procession in San Francisco only had about 25 people participating, simply holding candles and photos of the deceased. In 2013, the city saw an estimated 20,000 people in the parade (Marchi 282).

Altars

While altars have been a part of past traditional Dia de los Muertos celebrations, the creation and construction of altars have now become art programs for museums, schools, and community centers (Castro). Journalist Mary J. Andrade noted that her observations of different altar arrangements in Mexico over almost two decades reflect the culture's influence (Allen). With the current landscape of how the US population and younger generation view environmental damage and climate change, altars should evolve to reflect the new cultural concerns.

New Traditions

Dia de los Muertos participants exhibit an openness to changing some of the holiday's practices. Research shows that new traditions have been added to the celebrations with no ties to Mesoamerican origins. Although they adapted old traditions, artists practiced "Chicano-style" altar-making, street processions, and ceremonies as "invented traditions" or "newly created practices of a ritual or symbolic nature, aimed at inculcating certain values and norms to help establish group cohesion and identity." They also added new practices such as craft workshops, public lectures, and documentary screenings. Another Chicano creation of the holiday is a pre-Colombian form of dancing-in-prayer called danza, which gained popularity in the late 1970s and is not a ritual people in Mexico would perform. Sugar skulls were also not part of Mexican American Dia de los Muertos traditions until the 1970s. These Chicano artists wanted to reconfigure the holiday

instead of reproducing the Mexican traditions to make it more relevant to their experiences in the United States and "construct and perform cultural identity, rather than fulfill moral obligations to the dead" (Marchi 278-287).

Attempted Solutions

Food Donation Systems

Food donation has long been a part of the origins of Dia de los Muertos. Research shows that throughout the Middle Ages, during All Souls' Day celebrations, bread was placed on tombs and given to the less fortunate (Brandes 283). Today, several different types of food donation centers can help reduce avoidable food waste and lessen the environmental impact. Food pantries, food banks, and food rescue programs accept, sort, and redistribute donations to people in need. Food banks distribute food through emergency food assistance programs that send food to soup kitchens, youth or senior centers, shelters, and pantries. Food rescue programs distribute food to agencies and charities and receive food donations directly from donors (Smith 655).

Some food donation centers, alternatively, compost unfit food or donate it for animal feed. Some composted food can improve soil conditions by adding organic materials and nutrients back into it. The compost can also be donated to farmers to help reduce their fertilizer use. The EPA (Environmental Protection Agency) advocates "recovering food to feed hungry people, providing food to livestock farmers or zoos, recycling food for industrial

purposes, and composting food to improve soil fertility" (Smith 654-655). These various uses for food donations can help reduce avoidable food waste and environmental waste.

There are negatives to food donations, however, as food bank managers discard a significant amount of donations because the recipients are "not well-served by the scraps of consumer society, such as hundreds of pumpkin pies dumped right after Thanksgiving" (Mourad 30). Those Dia de los Muertos participants who choose to donate their food rather than leave it out on the altar may donate unhealthy meals such as fast food because that was favored by the deceased.

Farmer/Business Incentives

Federal laws have been put in place to encourage food donations from businesses and fresh produce from farmers to assist in food waste issues nationwide. Some incentives include tax deductions for charitable contributions, where businesses and farmers are provided additional tax credits up to 25% of the food's value. However, these incentives are challenging to implement or enforce. Businesses have been found to donate less than 10% of their excess food, and the food products they donate are low-quality products that end up being thrown out by food donation centers. However, the negative effect of businesses donating their excess food is that it cuts the resources for dumpster divers who shy away from food charities (Mourad 29-30).

Consumer Education

Consumer education campaigns (CEC) publicly advertise via multimedia and promote waste reduction at the consumer level, which is ideal considering the research found that consumers account for up to 50% of food waste. In a 2021 CEC, this method of food waste reduction was estimated to have a relatively lower cost of national-scale implementation compared to other methods. It was one of the most cost-effective intervention methods because of its wide audience reach. The campaign was proposed to result in approximately \$2 billion annually in averted food purchases, with predicted reductions on a national scale estimated at 0.50%. The research explains that the effectiveness of a CEC is because "small behavioral modifications by consumers have a large potential to reduce environmental impacts" (Read and Muth).

Various food reduction strategies have been implemented in other regions that are aimed at consumers. A food waste campaign in the



Large food offering (Day of the Dead Recipes)

UK successfully reduced avoidable food waste at the household level by providing tools to help reduce food waste and raise awareness (Stancu 15). In France, a bill was approved by Parliament in July 2015 that made it “forbidden” to toss out edible food. A similar type of ban has also passed in several US states (Mourad 29, 34). So far, these organic waste bans have been introduced in California, Connecticut, Massachusetts, Rhode Island, and Vermont on both a residential and business level to help keep food out of landfills. Califor-

nia’s law mandates recycling with a pledge to recover 20% of edible food waste for human consumption. Vermont’s Universal Recycling Law bans food waste disposal, which has helped see the state’s food donations grow by 40%. Massachusetts’ ban has generated \$175 million in economic activity, creating over 900 jobs for food waste haulers, processors, and recovery organizations (Fighting Food Waste). These lower-level strategies may have found success as “downstream diversion” is favored and funded more often by the local govern-

ment as opposed to “upstream prevention programs” since it is too difficult to enforce excess food incentives for businesses (Mourad 29).

Even though these solutions offer promising results individually, a combination of initiatives is needed to achieve substantial reductions. Researchers have found prevention interventions are more desirable than food repurpose approaches because they avert more negative impacts from food production, processing, transport, and redistribution of

food surplus. The researchers also emphasize the need for government intervention and action as individual producers or other actors in the food supply chain may be negatively impacted by reduced demand, even though the reduction strategies would benefit society at large and help decrease the degradation of shared environmental resources (Read and Muth).



Elaborate altar (Flora Farms)

Case Studies & Visual Analysis

Case Study 1

Stop the Waste

The Stop The Waste global campaign was created in 2019 by the United Nations World Food Programme (WFP) to raise awareness about the large amounts of edible food discarded daily. This case study was chosen as it relates to the edible food thrown out after the Día de los Muertos holiday and will help create a similar campaign for the proposed visual solution and deliverables of this thesis. The campaign is straightforward and informative and encourages immediate action through a simple social pledge. While the literature research found that the most significant factor in food waste lies at the consumer level, the Stop The Waste campaign aims to appeal to all levels along the food chain.

When the campaign was introduced in 2019, about 1.02 billion tons, or one-third, of food was wasted globally (Beer). The World Food Program USA estimated, at the time, that more than 690 million people, or one in eleven, went hungry. In order to meet the WFP's goal of eradicating world hunger and feeding the planet by 2050, one of the first steps is preventing food loss and food waste (WFP.org). The campaign utilized restaurateurs and celebrity chefs from around the world, such as award-winning chef Andrew Zimmern, to raise awareness and inspire their followers to pledge to stop food waste along with them (Tehran Times). The WFP used a simple call-to-action and encouraged public interaction on their social media platforms by sharing selfies with

their food items or food waste recipes tagged with #StopTheWaste. They also asked that participants challenge three of their friends to do the same to help spread the message to a bigger audience. In 2021, the WFP enlisted the help of influencers, celebrities, and Goodwill Ambassadors to honestly discuss how they personally waste food and what steps they can take to address the issue (WFP.org). They paired up various advocates via online video meetings to talk to one another and offer their tips on how to utilize edible food that would otherwise go to waste. Because the issue of food waste affects so many people, Pope Francis even showed his support, stating, "If we wish to build a future where no one is left behind, we must create a present that radically rejects the squandering of food" (WFP USA).

The organization finds the food waste issue is at every level of the chain, from farm to fork and makes an effort to appeal to all those involved through this global campaign. They target farmers to wholesalers to grocery stores to households, asking all levels to take simple steps to reduce food waste and support food rescue organizations. In addition to the online promotion of Stop The Waste, the WFP and the Australian Department for Foreign Affairs and Trade hosted an event in 2021 in Dubai for World Food Day. The event aimed to encourage their stakeholders to take action and help reduce food waste. The event also featured a live cooking activity to show attendees how to repurpose their extra food so it doesn't go to waste. Participating kids at the expo were also taught how to put together a lunch box made of leftovers, teaching them early on how

to avoid food waste in the future. Events like these, along with the digital campaign, not only raise awareness of the issue of food waste but also spotlight the WFP's resilience programs that help create crops and employment opportunities in local communities, such as those in regions like the Sahel (WFP.org).

Visual Analysis

The Stop The Waste campaign used four different styles of graphics for its digital collateral over the three years it regularly ran. One style has a natural aesthetic with a brown craft paper background with stamp-like images of food and text in a minimal color palette of red, green, black, and white. The style is quite casual with its hand-crafted look and imperfect textured artwork. Two of the four styles had a similar design of a solid colored background, white text, and a sole photo image or hand-drawn image of food above or below the headline. The use of the photo images lends itself to being more serious. However, the rounded corners of the bold, blocky text and soft colors of the background make the graphics more approachable (Fig. 1). The hand-drawn images change the tone of the graphics to much more casual and playful. The last style features animated characters taking selfies with their food in a promotional video in a minimal color palette of blue, yellow, and black. This style is the most playful of the four since the cartoon characters are exaggerated in proportions and blue in skin color. Over these four styles, the campaign has adopted two different looks to their slogan of Stop The Waste. One mimics a white serrated-edge rect-

angle resembling a grocery store receipt, while the other is simply a justified block or stack of text in the center of the background or tucked away in a corner.

Overall, the graphics are minimal, allowing the data and text to take center stage for a majority of the styles. The images either blend into the background color, such as the yellow banana or are smaller than the text by comparison. Facts about food waste have been broken down into the most basic and bite-size points, using one sentence or statistic per graphic to not overwhelm the audience. The large size of the text and contrast against the backgrounds help make the data easy to read at a glance and catch the eye as users scroll. Some graphics have also utilized the artwork to help visually explain the shared data or information, such as percentages or uses for leftovers.

The campaign had a straightforward course of social media promotion due to the accom-



Fig. 1 (United Nations World Food Programme)

panying call-to-action tag, #StopTheWaste. The graphics' playful, colorful, and bold look is quite eye-catching when scrolling through a feed, working well on social media platforms such as Instagram, Twitter, Facebook, or LinkedIn. Because the WFP encouraged participants to share a selfie with their leftover food, it can be argued that the target audience was a younger demographic of around 20-29 years old, as they make up about 30% of all social media users. Additionally, since the World Food Programme works globally, it appears essential that the graphics of food or photo images are simple and easy to understand, no matter the language. This approach also allowed for the text to be translated into other languages to be used for a larger audience around the world.

The composition of these campaign graphics will help to inform the style of the proposed visual solutions of this thesis as they aim to



Fig. 2 (Leibrock)

work similarly by sharing important data about food waste during the Dia de los Muertos holiday in a way that is eye-catching yet simple. Because the holiday is of Mesoamerican origin and is celebrated by Hispanics, the ability to easily translate the graphics from English to Spanish or have the graphics be easily understood no matter the language would be most beneficial to the visual solution.

Case Study 2

I Value Food

The I Value Food campaign was created in 2015 by Sustainable America as an effort to end food waste in the United States. This case study was chosen as it narrows down the issue of food waste from the first global case study to a nationwide scale focused on America, where the thesis seeks to enact change. The thesis can gain a significant amount of insight into strategies that can be utilized to reduce the waste created around the Dia de los Muertos holiday. Additionally, the campaign focuses on consumers, the largest contributors to food waste, as found in the literature research. However, Food Tank points out that the campaign “does not shame consumers, but rather supports a more economically and ecologically sustainable purchasing ethic.” Overall, this campaign should help inform how to approach this particular audience positively without shaming them for any wasteful practices. The campaign is clean and informative and adds an element of interaction to gauge the audience’s contribution to the issue in a non-judgmental way.

When introducing the initiative, the Sustainable America organization stated that in the U.S., 40% of the food produced is wasted. At the time, they also estimated that about 49 million households have to deal with food insecurity every year. Sustainable America is a 501(c)(3) non-profit organization whose mission is to “make the nation’s food and fuel systems more efficient and resilient.” Initiatives like I Value Food help their goal of reducing oil usage and increasing food availability in the U.S. through public education. They consider the I Value Food campaign to be a fresh take on the issue of food waste and offer tools that can help consumers positively impact the environment and economy (Sustainable America). The organization has created a website solely for this campaign, splitting the information into four distinct parts that all work together to inform, educate, and influence. The I Value Food video discusses facts about the issue of food waste in America, the “meal reveal” informs the consumer about hidden wasted food throughout a day’s meals, the quiz measures the consumer’s food waste impact, and then the site offers tips and resources based on the quiz results. While the campaign is primarily informative, the site encourages users to share the quiz link with at least one person over social media. Specifically, it directs the consumer to “take action” by learning tips for reducing food waste or taking the “Too Good to Waste Challenge.” The tips include articles such as “What to Do with Lonely Leftovers,” “What to Do with Leftover Halloween Candy,” and “How to Host a Salvaged Food Dinner Party.” The “Too Good to Waste Challenge” takes place over four

weeks, having the user track their food waste during week one and sending strategies over the next three weeks to help them adjust, save food, and continue the positive practices in the future.

Sustainable America created the I Value Food project with the help of several food-related organizations, including Food Tank, Feeding America, Food Waste Reduction Alliance, and the Natural Resources Defense Council. They also used the U.S. Department of Agriculture (USDA) and the Environmental Protection Agency (EPA) for research to create the comprehensive challenges featured on the campaign’s site. Additionally, outside organizations like The Rockefeller Foundation had seen enough worth in the I Value Food campaign to reference it in their “Toolkit for Food Waste-Free Events” as a strategy to help staff reduce their food waste at home and in the office (Further with Food).

Visual Analysis

The I Value Food campaign has a distinct brand identity that is separate from its founding organization, Sustainable America. It employs a retro vibe reminiscent of old-school diner signage via the script typeface used and simple utensil artwork. That look is echoed throughout the campaign’s website, with the script highlighting headings and other main points of interest. Because the organization is Sustainable America, the look also has an Americana design aesthetic (Fig. 2). The photography used on the homepage features food displayed as if it were served in a diner

or on a picnic, as noted by the chrome napkin dispenser and tablecloths. The color palette leans patriotic without being too on the nose as it sticks to slightly less saturated primary colors of yellow, red, and blue, with a muted taupe used to break up the color blocks. The punchy colors, nostalgic-like photography, and simple artwork evoke a more playful tone as opposed to a serious one, even though the statistics are staggering (Fig. 3). As stated above, the campaign aims to raise awareness without shaming the consumer, so the design style helps emphasize this positive approach to connecting with the audience. The Americana look can also play into the consumer's patriotic spirit since the organization aims to solve these issues to improve the nation.

The website first features an animated video stating facts about food waste with plain black text over a light background and simple graphics of food and other items to complement each point. The "meal reveal" section showcases large headlines to break the section

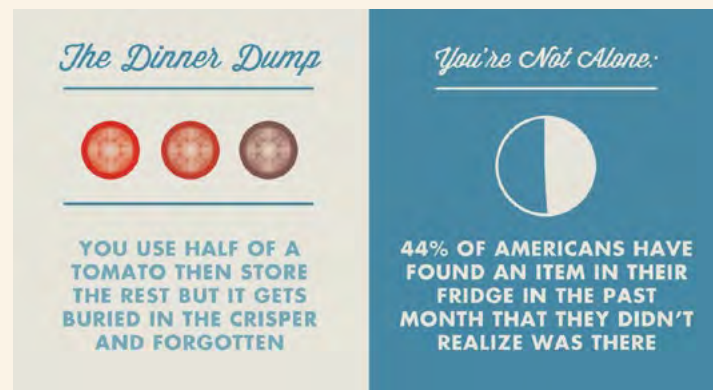


Fig. 3 (Leibrock)

down further into the three meal categories: breakfast, lunch, and dinner. Furthermore, each meal section uses a different color to organize the statistics. That data features the text playfully arranged into justified blocks, highlighting important references or numbers in a larger size. Simple charts and food graphics help visually depict the data. Each color block makes excellent use of white space and only features one to two statistics per section to not overwhelm the consumer with too much information all at once. The quiz section continues the theme and uses graduated blocks of the same color palette from yellow to red for each question, which are all multiple-choice. The resources page features colorful photo images accompanying each article and step-by-step instructions inside the articles depending on the subject. The challenge page is the only section that breaks away from the campaign's overall theme, standing on its own by using only shades of green for all headings, graphics, and buttons. Since this section is more of a landing page on which to register for the 4-week challenge, it does not detract from the campaign's central message or aesthetic.

The main avenue of the campaign is its website. However, the blocks of information of each section can be shared individually across social media platforms such as Facebook, Twitter, Pinterest, and Instagram. The posts can also be tagged using #IValueFood. While the visual elements do not contribute significantly to the message, other than tying into the founding organization's theme, they help create an eye-catching way to present statistics that looks aesthetically pleasing in a

social media feed as users scroll.

This campaign's graphics can provide a reference for the thesis as they showcase how a cohesive theme used throughout the collateral can help create a strong visual solution. Because the thesis focuses on such a recognizable holiday, the theme can be used to its advantage to attract the attention of participants and follow a thread of design to keep the focus on the message.

Case Study 3

Save More Than Food

The Save More Than Food campaign was launched in September 2020 by the Solid Waste Authority of Central Ohio (SWACO) in partnership with over 150 organizations and businesses that make up the Central Ohio Food Waste Initiative (COFWI). The campaign aims to educate consumers about food waste behaviors and preventative measures (BioCycle). This case study was chosen for this thesis as it further narrows the audience from a national to a statewide scale, which should aid the proposed solutions when trying to appeal to a more local community. The campaign is clean and simple but uses photo images to compare aspects of food waste in eye-catching juxtapositions.

In 2019, COFWI proposed 20 solutions to cut Central Ohio's food waste in half by the year 2030 (BioCycle). They estimated that 86% of their residents were concerned about the amount of daily food waste in the state,

and they recorded that over 152,000 tons of food waste ended up in landfills in 2018, or 192 million meals. The organization found that an average family of four purchased up to \$2000 on food never eaten. After several stakeholder meetings, the collective mapped out its path to reducing food waste and created the Central Ohio Food Waste Action Plan. They divided their mission into three main categories: prevention, rescue, and recycling. Those categories were further broken down into residential, institutional, commercial, and industrial. As found in the literature research and acknowledged in the other two case studies, COWFI further emphasized that most food waste occurs at the consumer or household level, justifying its reasoning for targeting that market with this campaign. This "Consumer In-home Awareness Campaign," or Save More Than Food, is the first residential prevention solution on the organization's proposal list (Food Waste Action Plan). In November 2020, the EPA awarded a \$60,000 grant to SWACO to conduct pre-and post-campaign research on a particular community to gauge the campaign's impact or success (BioCycle). The organization pushes the campaign toward its target market by implementing it in related events such as Food Waste Action Week in March, reiterating key campaign elements, such as how to store food to prevent waste properly (SWACO Civic Alerts).

The campaign has partnered with a vast amount of organizations in different categories. Its partnerships with government agencies include the Environmental Protection Agency (EPA), the Ohio Department of

Agriculture, and the Columbus City Council. It has also teamed up with educational institutions such as Columbus State Community College and The Ohio State University. Business partners include Del Monte, Hilton Hotels, Kroger, Wendy's, and White Castle. Finally, the campaign works with several non-profits and food-related organizations, including the Columbus Green Spot, Food Rescue US, Kids That Compost, the World Wildlife Fund, and Experience Columbus (Food Waste Action Plan). Collaborating with these various partners in critical sectors of the state expands the campaign's reach to a much larger audience.

The Save More Than Food campaign is highly informative. The website provides a food storage guide, meal plan help, a thorough guide to composting, and statistics on food waste and its effects on the environment and economy. Similar to the I Value Food campaign, this campaign website also features a quiz. However, it tests a participant's knowledge of food waste rather than their impact on the issue. The campaign slogan does call to action as it tells the consumer to "Make a Difference." This campaign provides a blueprint for the thesis on being transparent with the target audience on the organization's goals and how it aims to reach them.

Visual Analysis

The Save More Than Food campaign uses a single design concept throughout its collateral: a photo image split in half and spliced together with another half image, bringing to mind and emphasizing the organization's pri-

mary goal of cutting the state's food waste in half by 2030. Because this two-sided image is prominently used throughout the campaign, it creates a recognizable design unique to them. The graphics also include a geometric pattern detail that ties into the identity and branding of SWACO to connect the organization to its campaign visually. The design uses a limited color palette of orange, green, and blue, also pulled from the SWACO logo, subtly echoed in the photo images for each graphic. The bright colors and playful composition create a casual tone that catches the consumer's attention and visually depicts the issue uniquely and memorably.

The divided image concept showcases a wasted food product with a wasted resource equivalent, such as "Wasted Food = Wasted Soil." The half images are thoughtfully pieced together to form a whole image, such as a bowl of food paired with a half mound of soil to complete the circular shape. The "Wasted Food = Wasted Energy" has the most exciting form of all the designs as it features half a banana paired with half of a gas pump, completing the curve of the banana (Fig. 4). The overall design is clean and direct, featuring one headline with a corresponding statistic below the image captured in one to two sentences. The split image makes the data easier to understand visually. The campaign identity remains consistent on each piece of collateral, even with each different background color used behind it.

The campaign's audience is localized to Central Ohio. SWACO has made it easy for their communities to learn more about the

campaign by creating a website specifically for it. The website uses the limited color palette to block off different sections of the site, making it easy for the user to navigate. A slideshow of visuals at the top of the homepage continues the split image theme, spotlighting more facts about food waste. The organization has also included on the site for users the full proposal pdf of their Food Waste Action Plan outlining the timeline and proposed solutions they hope to implement to reach their goal. The proposal uses the same three-color palette throughout, creating a cohesive extension of the campaign. They have included simple infographics highlighting various statistics on the food waste issue and color-coded the three categories of the proposed solutions to make them easier to follow.

SWACO has made it easy to share and raise awareness of the Save More Than Food campaign by featuring an entire section of marketing resources and assets. Here, the user can download social media graphics, brochures, flyers, posters, and presentation slides in the same split image design and color palette. Providing the collateral in these various forms of media allows the organization to control the branding and message and have a consistent identity that can easily be linked back to their campaign.

This campaign provides insight into how a single design concept can still have plenty of variety and spark curiosity for the audience to explore further. Additionally, the thesis can apply the same approach of providing ready-made assets for various media types so

users can easily share and spread awareness of the issues. Furthermore, creating a website specifically for the campaign with these assets, interactive elements such as the quiz, and a solution proposal document provides a reference for the thesis to expand on its visual solutions.



Fig. 4 (Save More Than Food)

Summary of Findings

Conclusion

While the studies on waste did not point to the Dia de los Muertos holiday as a primary factor, they mostly agreed that food waste was concentrated at the consumer level. The reviews of attempted solutions to minimize waste showed that because this level was the easiest route to enact change, consumer education was a successful course to help combat the issue. The studied campaigns to reduce food waste also targeted consumers in their messaging and visuals. Additionally, the popularity of the Dia de los Muertos holiday in the United States continues to rise and reach more consumers yearly via mainstream movies, merchandise, and local celebrations, making it easy for the campaign to reach and educate them. Even with those accessible avenues, significant roadblocks must be overcome to affect the consumer's mindset. In the Mesoamerican region where the holiday originated, these traditions have been followed for years to honor their ancestors. Across communities in Latin America, they continued these practices to avoid rumored consequences from the dead of illness, death, or poor harvests. Finally, with the introduction of Roman Catholicism into these indigenous communities, some participants view these practices as a religious experience and a chance for remembrance.



Calaveras (Photo by Jeremy Lwanga on Unsplash)

Chapter 3

Design Process



Visual Solution

Overview

The visual solution for this thesis needs to raise awareness of food, financial, and environmental waste among US consumers, namely the primary household shoppers: females aged 18 to 40 who wish to participate in the Dia de los Muertos holiday traditions. Favored dishes left out for the deceased often go uneaten and trashed, altar competitions can lead to excessive spending, and food waste significantly impacts greenhouse gas emissions.

A visual consumer education campaign has been created to fulfill this goal, as studies showed they were the most effective attempted solution to enact substantial change at the consumer level. The campaign includes posters, social media graphics, and short an-

imations that provide statistics and guidance on reducing this waste. The social media graphics and animations will be posted on various platforms to reach the target audience, such as Facebook, Instagram, and TikTok. The posters will be displayed at organizations that contribute to the annual celebration of the Dia de los Muertos holiday, such as city councils, museums, retailers, and grocery stores.

A simplistic illustration treatment will recall the style of Aztec pictograms, the region where the holiday originated. Traditional Dia de los Muertos symbols will provide context to the issue. Religious imagery will reference the day's Roman Catholic ties, and bright colors will help to attract target viewers.



("Sugar skulls" iStock.com/hayaship)

Mood Board

This mood board was created to help with the concept, art direction, illustration style, and layout of the final visual solution for the consumer education campaign posters and social media graphics. The mood board contains reference images of current Dia de los Muertos holiday merchandise, celebration announcements, religious and symbolic paintings, and Aztec pictograms. These images helped combine all the necessary elements for the concept, influence the illustration style, and inform what colors would attract viewers while referencing the iconic holiday.



From Top Left:
 Muertos Fest
 Photo by Author
 San Jacinto Funeral Home
 Cleveland Public Theatre
 Red Salmon Arts
 Photo by Author
 Glasstire: Houston MECA
 ThoughtCo, Heritage Images/
 Getty Images
 Target
 Wikimedia Commons
 Douwes Fine Art
 Target
 Wikipedia
 Wikimedia Commons
 Mexicolore
 Mexicolore





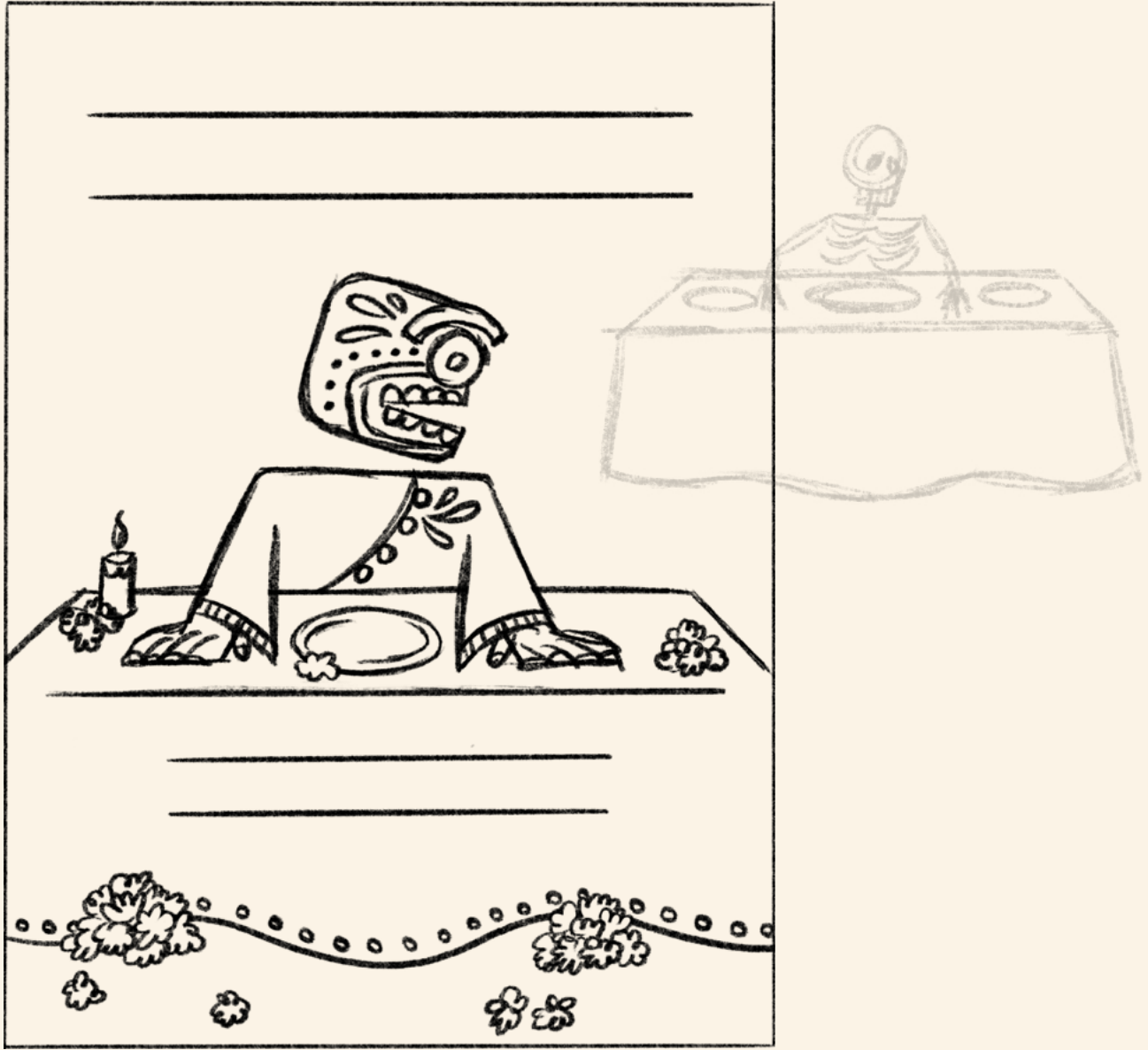
Statistics
<input type="checkbox"/> Food / Financial Waste
<input checked="" type="checkbox"/> 139 lbs of edible food is discarded per household
<input checked="" type="checkbox"/> Food waste costs The US around \$165 billion a year
<input checked="" type="checkbox"/> About 17 million Americans are food insecure 2015
<input type="checkbox"/> Up to 133 billion lbs of food per year never gets eaten
<input type="checkbox"/> 95% of food waste ends up in landfills
<input type="checkbox"/> 50% of food waste is created by consumers
<input type="checkbox"/> 50% of food waste is generated at household level
<input checked="" type="checkbox"/> American food waste would fill 730 football stadiums
<input type="checkbox"/> a year
<input type="checkbox"/> 34 million Americans are food insecure 19-21
<input checked="" type="checkbox"/> 50 billion meals go uneaten at home
<input checked="" type="checkbox"/> US households spend about \$936 per year on uneaten food
<input type="checkbox"/> Leaving food out too long is one cause of food waste
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

Waste statistics

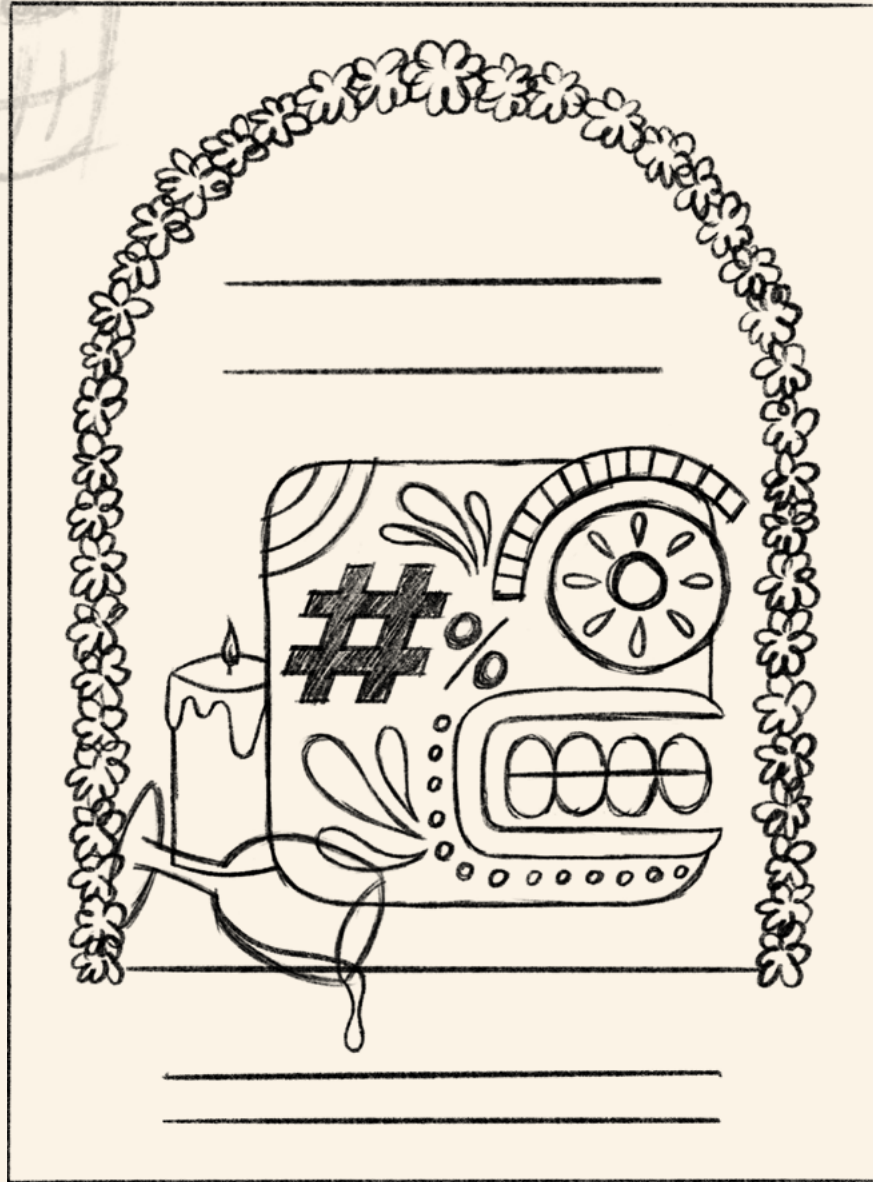
Environmental Waste
<input checked="" type="checkbox"/> Food waste accounts for over 20% of methane emissions ²⁰¹⁷
<input type="checkbox"/> Methane accounts for 10% of human-caused greenhouse-gas emissions in the US
<input checked="" type="checkbox"/> Food waste accounts for 7% of greenhouse-gas emissions
<input checked="" type="checkbox"/> Each ton of food waste produces 3.8 tons of greenhouse-gas emissions
<input checked="" type="checkbox"/> Food waste makes up the largest percentage of solid waste at 28%
<input checked="" type="checkbox"/> Wasted food takes up 400-1100 m ² of land
<input type="checkbox"/> " uses up 2-9 kg of fertilizer
<input checked="" type="checkbox"/> " 40,000 - 350,000 liters of water
<input type="checkbox"/> " 6,000 - 8,500 BTU of energy
<input type="checkbox"/> " 125 - 900 kg of CO2
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

Taglines / Call to Actions
<input type="checkbox"/> Honor tradition while reducing waste
<input type="checkbox"/> Say "adios" to food waste
<input type="checkbox"/> Honor our past while protecting our future
<input type="checkbox"/> Marigolds, memories, & meals
<input type="checkbox"/> Remember our loved ones responsibly
<input type="checkbox"/> Waste-free celebration
<input type="checkbox"/> Sustainable Traditions
<input type="checkbox"/> Let's budget our blessings
<input type="checkbox"/> Sustainable Spirit
<input type="checkbox"/> Reduce, Reuse, Remember
<input type="checkbox"/> Mindful Memories
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

Taglines and call-to-actions



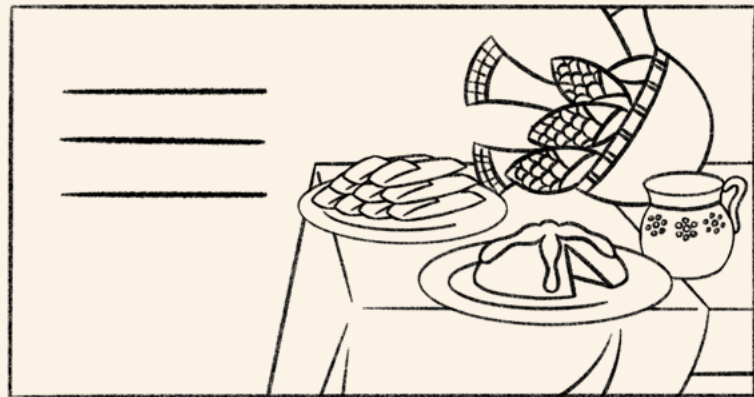
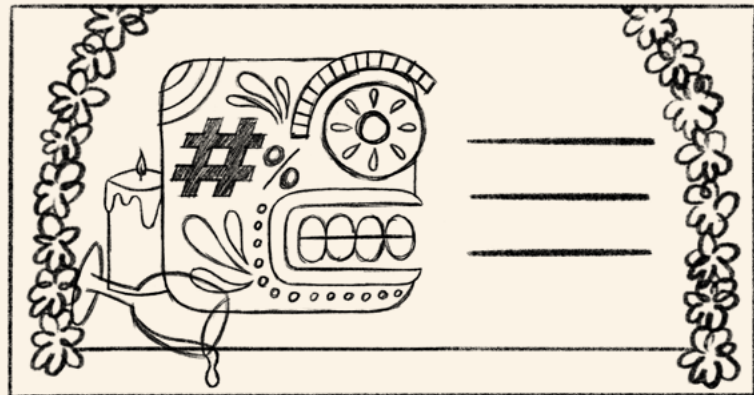
Rough draft for poster A (last supper)



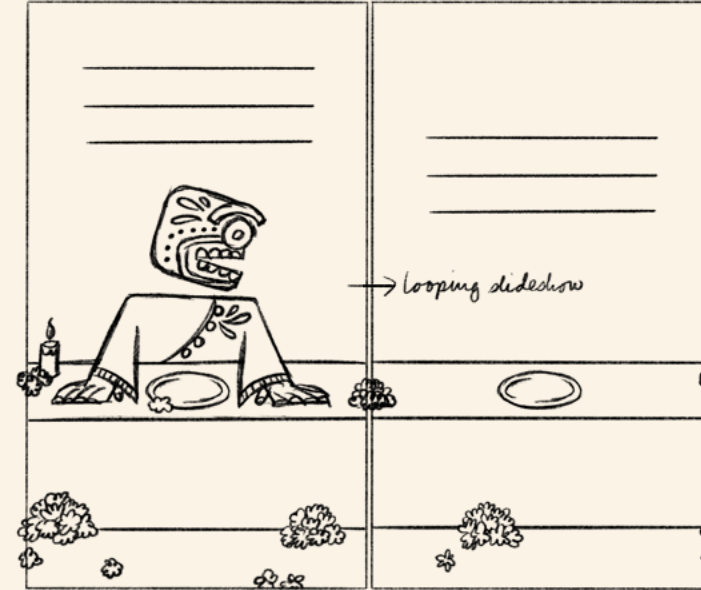
Rough draft for poster B (vanitas)



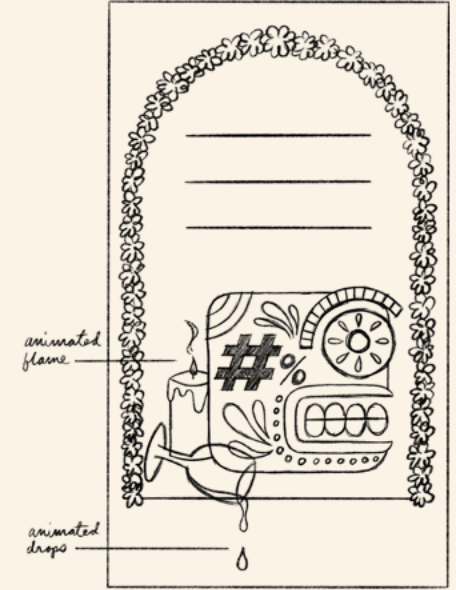
Rough draft for poster C (still life)



Rough drafts for social media graphics D, E, F



Rough draft for video graphic G, looping slideshow



Rough draft for video graphic H, animated elements

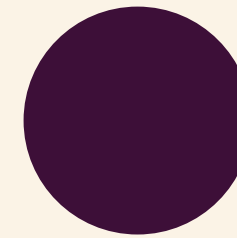


Rough draft for video graphic I, slideshow

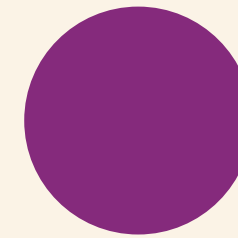
Color Palette & Texture

The color palette was created after analyzing the current trending holiday merchandise and combining those with the traditional colors used in relation to Dia de los Muertos. Yellow and orange are typically used due to the abundance of marigolds adorning the altars, while a deep purple is used for mourning, as it is in the Catholic religion. The other colors are bright counterparts to the more subdued palette typically seen in ancient Aztec pictograms.

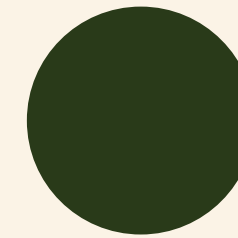
The texture is inspired by the Aztec codices and pictograms, giving the visual solution a worn, handmade look with rough linework and patchy colors.



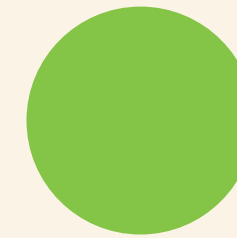
CMYK: 70, 96, 43, 54
RGB: 61, 15, 56
HEX: 3D0F38



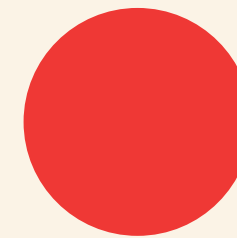
CMYK: 56, 99, 17, 3
RGB: 133, 42, 124
HEX: 852A7C



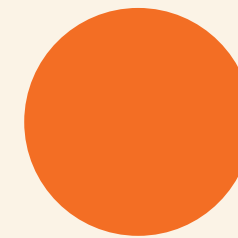
CMYK: 67, 42, 88, 67
RGB: 41, 58, 25
HEX: 293A19



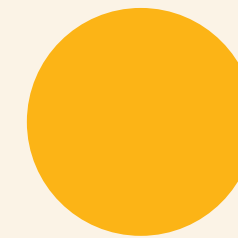
CMYK: 53, 0, 96, 0
RGB: 131, 196, 70
HEX: 83C446



CMYK: 0, 93, 86, 0
RGB: 239, 56, 53
HEX: EF3835



CMYK: 0, 71, 98, 0
RGB: 243, 110, 36
HEX: F36E24



CMYK: 0, 33, 100, 0
RGB: 252, 180, 22
HEX: FCB416



CMYK: 0, 8, 34, 0
RGB: 255, 231, 179
HEX: FFE7BC

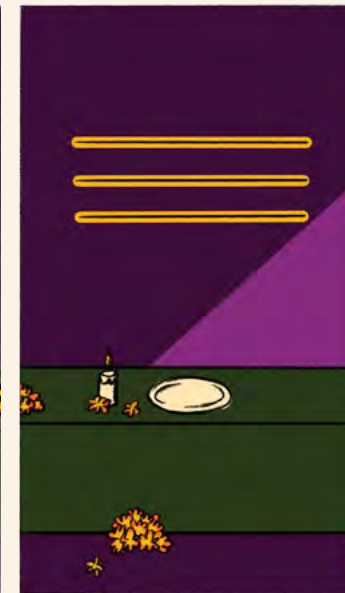
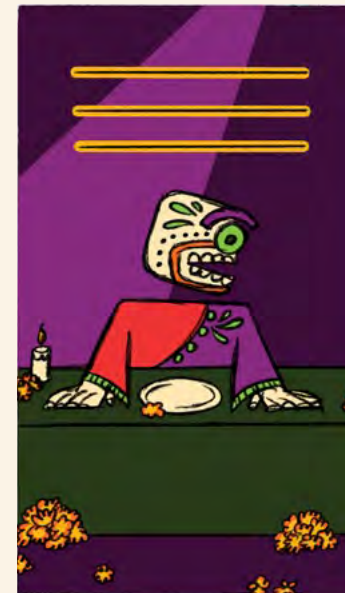


(Left: Khan Academy), (Right: Mexicolore)

Color Tests

The color palette was applied to the rough drafts to test how the colors worked together and the best areas to place specific colors for maximum impact. Utilizing the purples for the background helps the off-white color stand out. This contrast highlights the plates of food and skulls to bring the viewer's attention to the campaign's subject of waste issues and statistics.





Typography

The typography for the visual solution was carefully chosen, as the posters and graphics need to relay important information effectively.

The typeface Capitolina, as seen throughout this thesis in the chapter titles and body, was chosen for several factors. It comes from a Latin type foundry from Brazil, Typefolio, which ties into the cultural background of the Dia de los Muertos holiday. It has many weights for different levels of emphasis and importance. The bold versions have edgy diagonal cuts that add character to the serifs. The stylization also

helps transform a traditional font into a more contemporary one. It is easy to read at any weight which helps the visual solution as it works to display various statistics that will be viewed from near and far.

Proxima Nova, also seen throughout this document, has been paired with Capitolina for minor bits of information that are less prominent on the graphics. The sans serif typeface contrasts nicely against the bold serif and comes in many weights to fit different needs. The two choices work together to convey the message throughout the campaign graphics.



Capitolina

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890

Proxima Nova

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890

Chapter 4

Visual Solution



Consumer Education Campaign

Overview

As the Dia de los Muertos holiday has become a more mainstream cultural event celebrated across the US, its contemporary traditions can significantly impact wasteful practices. Elaborate altars (ofrendas) cause consumers to overspend, waste food, and contribute to greenhouse gas emissions via food waste. The visual solution aims to bring awareness to these issues to help reduce or eliminate the waste created by the holiday at the consumer level.

With the waste issues found to be created primarily by consumers, a target audience was established as primary household shoppers: females aged 18 to 40, based on the 2012 two-week study by Koivupuro that found this group to cause the most food waste (Koivupuro et al. 186-190). Analyzation of the three case studies, Stop the Waste, I Value Food, and Save More Than Food, found they utilized websites and shareable social media graphics to raise awareness on a global, national, and local level. This campaign will follow suit and post graphics on popular social media platforms, Facebook, Instagram, and TikTok, as well as display posters at community hubs such as grocery stores, libraries, and museums to reach the target demographic.

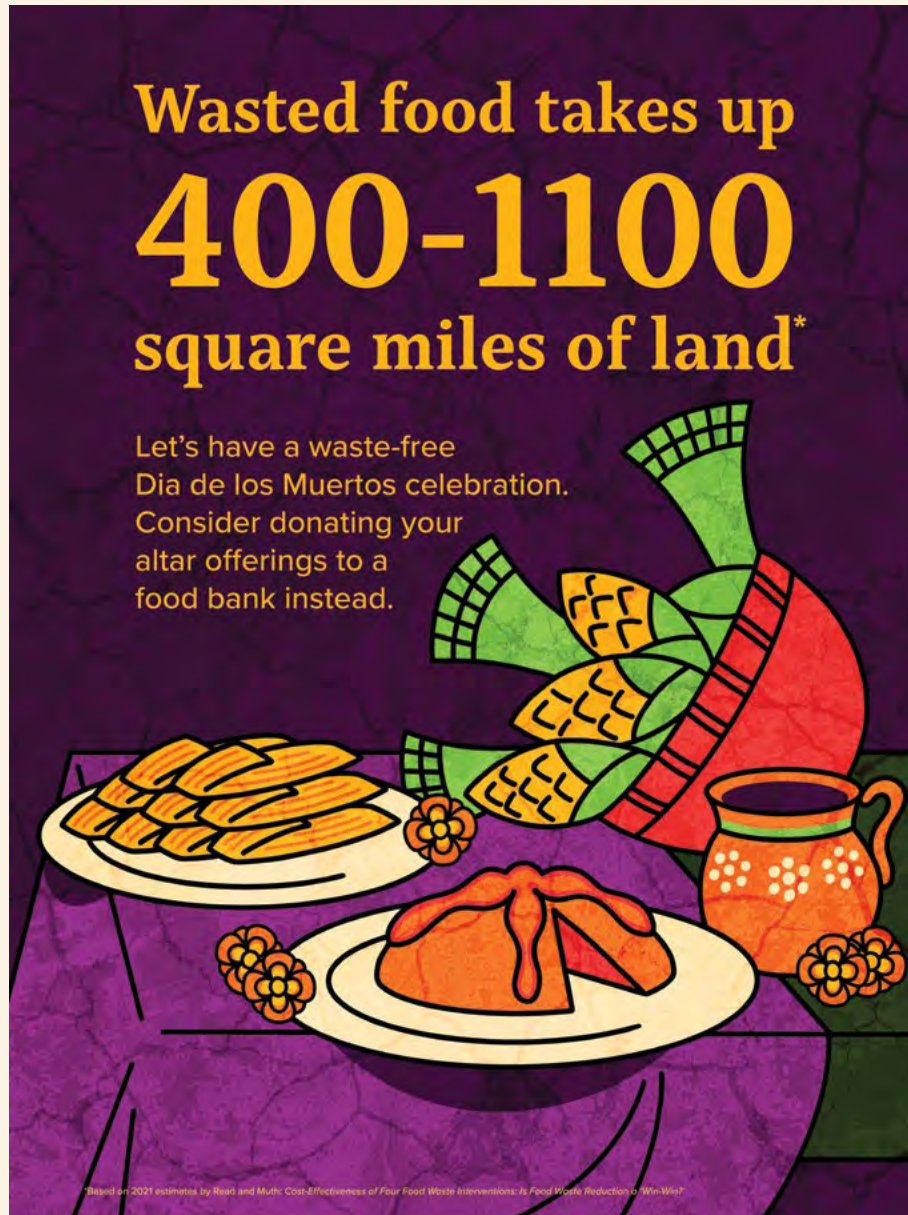
The final designs for the consumer education campaign took their visual cues from several sources. The illustration style looked toward the originating community of the indigenous Aztecs in Mesoamerica to connect the graphics to the origins of Dia de los Muertos. Their ancient codices primarily consisted of

bold-lined, two-dimensional pictograms that have weathered over time, and many of their illustrations feature a skeleton character, Mictlantecuhtli, their god of the dead. Popular holiday icons have been used throughout the campaign to make the context clear that it refers to Dia de los Muertos. Sugar skulls, pan de muerto, and tamales have been prominent features of the holiday dating back to Aztec mortuary rituals (Brandes 277-278; De Orellana 71; Benítez et al. 75-76, 81). Marigolds, the traditional flower of the holiday sold in the millions each year, adorn the designs and add a warm color contrast to the palette that helps the statistics stand out (Sanchez). Purple heavily blankets the backgrounds, bringing in a symbol of mourning taken from Catholic tradition. To further reiterate the religious experience felt during Dia de los Muertos and tie in Roman Catholicism's introduction to the Mesoamerican region, a cohesive thread of classic Biblical paintings has been utilized as a concept throughout the artwork (Brandes 365). Food-related works, such as The Last Supper, vanitas, and still lifes, have a strong visual impact, and their heavy use of symbolism enhances the campaign's message: candles representing death and dying and dead bread referencing the holiday and body of Christ.

All graphics were hand-drawn in Procreate on an iPad to achieve a similar illustration style to Aztec pictograms. To give the various elements character, the marigolds, for example, were each drawn out. The illustrations and color layers were imported into Photoshop, where textures were applied to achieve the worn paper look.

Posters





Posters will be displayed throughout the source of the waste, grocery stores. ("Woman Looking at Drinks " Designed by Freepik/ modified)



Public space exteriors such as museums and libraries will catch the consumer's attention. ("Blank Sign" Designed by Freepik/modified)



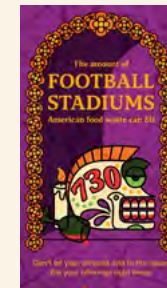
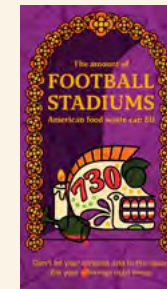
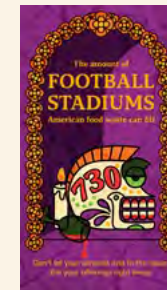
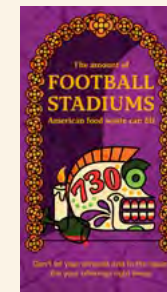
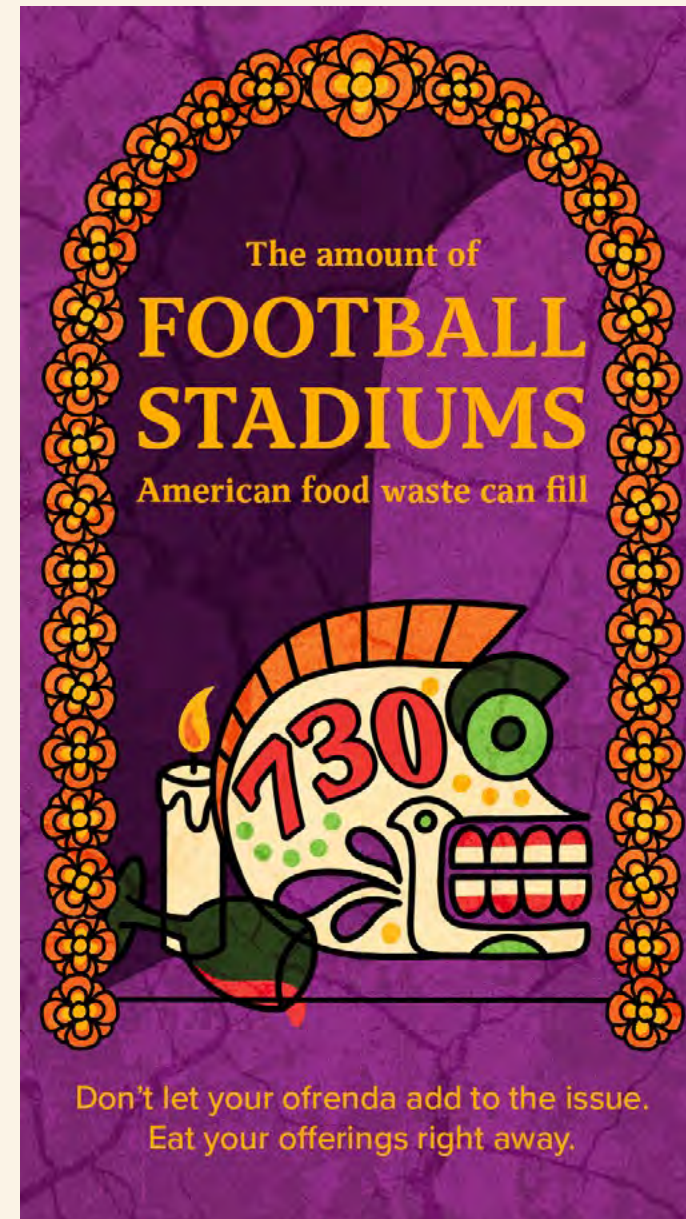
Full-color advertisements in local publications will reach consumers at the older end of the target demographic. ("Man Reading the News" Designed by Freepik/modified)

Social Media Graphics



Social media graphics will be featured on popular platforms, Facebook and Instagram ("Abstract Blur Shopping Mall" Designed by Freepik/modified, Photo by abillion on Unsplash/modified)

Videos/Animation



EACH TON
of food waste produces...

3.8 TONS
of greenhouse gas emissions

Let's honor our loved ones sustainably by eliminating food offerings from our altars.

EACH TON
of food waste produces...

3.8 TONS
of greenhouse gas emissions

Let's honor our loved ones sustainably by eliminating food offerings from our altars.

EACH TON
of food waste produces...

3.8 TONS
of greenhouse gas emissions

Let's honor our loved ones sustainably by eliminating food offerings from our altars.

EACH TON
of food waste produces...

3.8 TONS
of greenhouse gas emissions

Let's honor our loved ones sustainably by eliminating food offerings from our altars.



Short animated videos on TikTok will catch the attention of the younger demographic. ("Abstract Blur Supermarket" Designed by Freepik/modified, Photo by abillion on Unsplash/modified)

Chapter 5

Conclusion



Conclusion

Overview

Overhauling the embedded ancestral traditions of a cultural holiday like Dia de los Muertos to reduce food, financial, and environmental waste across a nation is a significant undertaking. While the thesis research found no evidence to suggest the holiday as the main culprit of the waste issues, it is reasonable to conclude that its practices surrounding ofrendas contribute to the issues and can only worsen as the holiday becomes more popular in the US.

Extensive research on the subject helped narrow down a significant source of waste in general to the consumer level at 50% (Mourad 27, Stancu et al. 8). Further studies on food waste pinpointed women who were the primary household shoppers contributed the most to the issue at this level (Koivupuro et al. 186-190). Efforts to enact change found that consumer education campaigns were a highly effective method of food waste reduction due to the relatively lower cost of national-scale implementation and cost-effective wide audience reach. The study explained that this type of campaign's effectiveness is because "small behavioral modifications by consumers have a large potential to reduce environmental impacts" (Read and Muth).

Solution

The consumer education campaign designed for Mi Ofrenda will help to raise awareness of the waste issues in the US and how Dia de los Muertos participants can avoid or reduce their contribution to the problem. The visuals

and messaging of the campaign aim to affect consumers' choices and urge them to celebrate the holiday more sustainably with a focus on food as it affects the three major concerns of the thesis. The holiday essentially becomes a jumping-off point for consumers to alter their behaviors by eliminating or reducing the food aspects of their altars or making food donations. With a target market established of women aged 18-40 in the US, the campaign will work to reach the audience on popular platforms like TikTok and Facebook and a primary source of waste: the grocery store.

The bright colors will attract the target audience in person and on various social media platforms as they scroll through their feeds. The bold contrast in the colors helps the information stand out. The two-dimensional illustration style and widely-known Dia de los Muertos icons of sugar skulls and marigolds reference the Aztec origins of the holiday and provide context. The classic biblical painting design concept brings in the religious aspect of the holiday as well as symbolic meaning.

Ultimate Goal

The ultimate goal of the campaign is to impact consumers enough to make better decisions when celebrating the Dia de los Muertos holiday as to not contribute any more to food, financial, and environmental waste issues, hopefully creating a substantial reduction in waste across the US over time.

Moving Forward

If this thesis were to proceed, market research would be necessary to fill the knowledge gaps and create a strong campaign. Anonymous surveys taken at grocery stores and Dia de los Muertos festivals regarding food offerings could provide more solid statistics and reveal areas that may have been missed in the primary research, such as the aftermath specifics of food offerings and ofrenda decor. Online polls in communities that host large festivals could give further insight into participants' attitudes toward food waste and the best way to enact change.

Further questioning and the right resources could help develop alternatives to physical altars, such as Dia de los Muertos-based apps or digital altars. These options could feature the same originality and fanfare of a physical ofrenda without the waste and be more personalized and memorable than a standard social media post. Collaborating with local governments and museums to open up the program to the public would preserve the community aspect of the holiday so friends and neighbors can also pay their respects.

Additionally, research can be shared and exchanged with national organizations such as The Culture Marketing Council, United States Hispanic Chamber of Commerce, and UnidosUS. The campaign could greatly benefit from the expertise of The Culture Marketing Council known as "The Voice of Hispanic Marketing" as they have 20+ years experience and advocate for increased investment in multicultural marketing strategies. The USHCC has

a 25-year history, a network of more than 150 local Hispanic Chambers of Commerce, and communicates the needs of Hispanic enterprise to public and private sectors. UnidosUS, formerly known as the National Council of La Raza (NCLR) serves the Hispanic community through research and program work in communities nationwide.

The combined efforts of these organizations, local feedback, and extensive research would make it possible to have a strong campaign that creates substantial change regarding food, financial, and environmental waste in the US against the backdrop of the Dia de los Muertos holiday.



("Happy Family" Designed by Freepik/modified)





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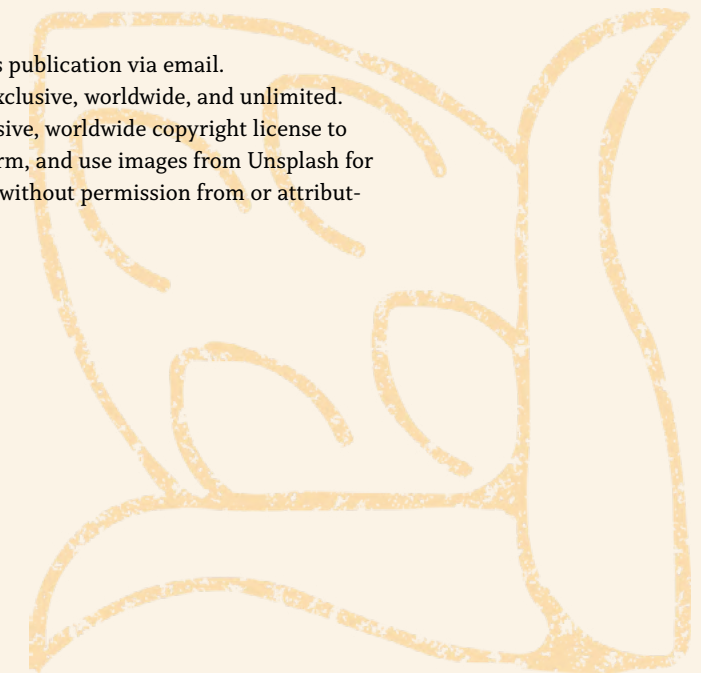


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