


A Low-Emission and
Low-Waste Exploration
and Cookbook

By Helena Ashmore

A decorative border of blue flowers and green leaves surrounds the central text. The flowers are five-petaled with yellow centers, and the leaves are small and oval-shaped. The stems are thin and green, with some curling upwards.

I would like to dedicate this
cookbook to my friends. Thank
you for the last four years full of
fun and amazing food. Thank you
to my roommates Julia and Kelly,
Max, my boyfriend Luke, and my
sister, Avalon, for attending this
final dinner to try something new
and learn about sustainability.

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Introduction

-My experience with sustainability and food-

One way I can describe my college experience is my progression in my relationship with food. Before college, I rarely cooked on my own, but I usually helped my mom occasionally stir, chop, or take dinner out of the oven. However, keeping my mom company while cooking was our way of telling each other about our day. I consistently watched and learned her techniques for simple pastas, pot roast, and cookies.

When it came time to move to the dorms, I was on a full meal plan and had only a microwave and fridge in the dorm. As an Environmental Studies major who was passionate about food waste, I admired USC's goals to eliminate waste from their dining halls in addition to offering vegan and vegetarian options. As someone who wasn't vegetarian or vegan, it was still easier to make conscious decisions about how much meat I incorporated into my diet, or not worry about food waste since I was only in control of taking my portions.

Freshman year also allowed room for creative eating decisions. My roommate Julia and I bonded through making sandwiches and attempting to make cookies in the microwave. Walking to Spudnuts for a midnight egg sandwich was frequent. Despite limited options, I strived for good food and appreciated it when I got it.

My sophomore and junior years were the years of experimentation and exploration. My roommate and I exchanged recipes and were able to choose meals. Many of my friends also enjoy cooking, and we all hosted dinner nights to show off what dishes we could make. I have also made Julia's birthday cake for the past three years (featured in the top right corner). I also hosted yearly Christmas cookie parties where friends would all bring cookies, and I would make dinner. We also played games like white elephant, decorated ornaments, and tried everyone's cookies. So many of my best memories at college centered around my friends and food.

This cookbook is the result of the intersection of friendship, cooking, and sustainability. Since my time at USC, I have learned so much about sustainability and its impacts. However, this past semester has focused on individual and community impact versus large-scale applications, such as creating a sense of place, building community, and establishing relational values to build our connection with nature. My goal was to push myself creatively and make a vegan dinner as my final dinner party as a college student. I was also very excited to invite friends over and teach them about more sustainable living choices and vegan cooking.





What is Low Emission? What is Low Waste?

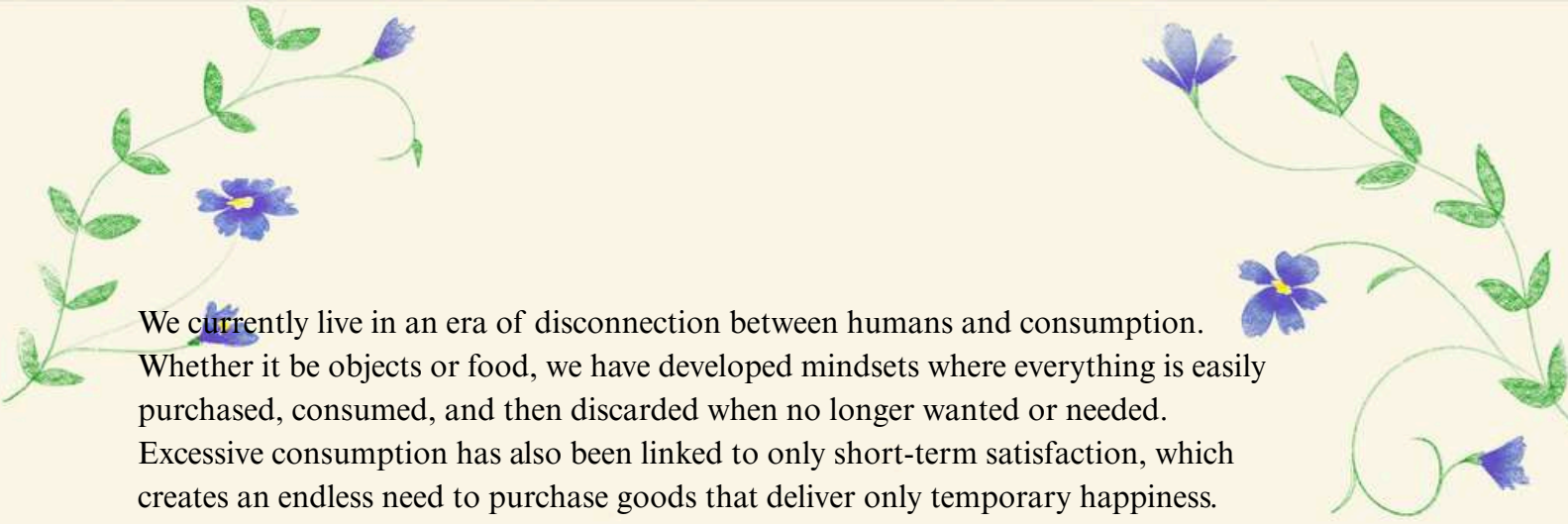
As climate change grows into an increasingly important global issue, decreasing carbon dioxide emissions into the atmosphere is crucial. Carbon dioxide can be emitted in many ways, but emissions have been most commonly categorized into three different categories:

- Scope 1: Emissions produced on site, such as burning firewood in your house for warmth, or installing solar panels on your roof.
- Scope 2: Indirect emissions from purchasing and using energy made from a different source. An example can be your energy utility bill, where energy is generated in a power plant and transported to your home.
- Scope 3: Emissions produced downstream from a company, organization, or community. An example is the disposal of waste produced by an organization.

The food we eat has a large place in emission generation, as food needs to be grown, transported, and distributed to the end consumer. Sometimes food is even processed or prepared before reaching the consumer. Food that is left over or spoils needs to be disposed of. **Food production accounts for about a third of human-caused greenhouse gas emissions across all scopes.**

Animal products are considered the highest-emitters of all foods, most notably beef. Cattle production requires a large amount of land for grazing and additional food production. Cattle also emit high levels of methane, creating additional emissions. While beef is the highest emitting food, other meats are considered high-emitting foods, followed by other animal products such as cheeses, eggs, and milk.

Additionally, **about 1 billion tons of food and 17% of all food produced goes to the landfill every year.** Not only does it take energy to grow, transport, and distribute food to customers. It takes more energy to store and eventually dispose of food once it has gone bad, wasting time, money, and resources. Food-related emissions can be reduced if more people adopt diets with less meat and more plant-based foods. Managing food waste can also be beneficial for our planet and uplift widespread practices that discourage food waste.

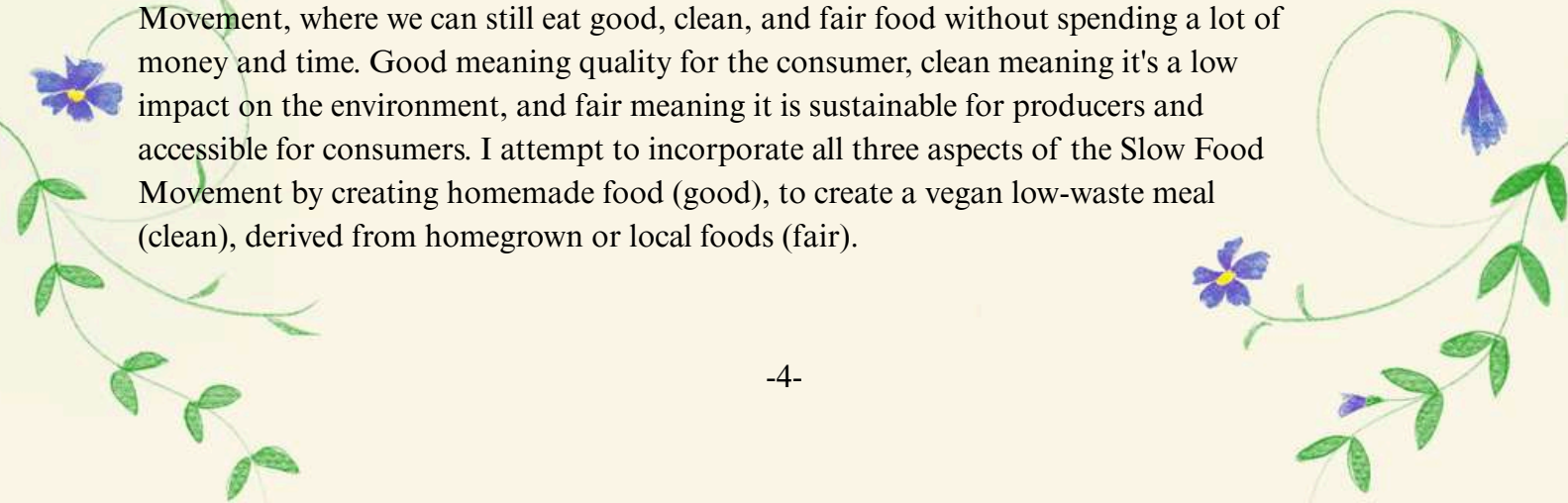


We currently live in an era of disconnection between humans and consumption. Whether it be objects or food, we have developed mindsets where everything is easily purchased, consumed, and then discarded when no longer wanted or needed. Excessive consumption has also been linked to only short-term satisfaction, which creates an endless need to purchase goods that deliver only temporary happiness.

Many people have transitioned to vegan or vegetarian diets to have a better impact on the environment. This can lead to lower emissions on the individual level. Many people have also opted to reduce food waste through composting or consciously purchasing items, whether it be buying “naked” produce, buying imperfect foods, or planning to make meals that use all edible parts of the food. An example of using food items to the fullest extent could be saving vegetable scraps to later use to make a vegetable broth for soups.

In this cookbook, I intend to take all of this information into account. Many people likely do not attempt low-emission or low-waste meals due to the increased effort with lack of better taste. As someone who loves to cook, I intend to show that low-emission and low-waste meals do not require more effort, and can also promote wellbeing and togetherness.

Some course themes that have inspired this cookbook are building social connection and community through a sense of place. By building these memories with friends, there comes an increased attachment and urge to care for their surrounding environment. By having dinner in my backyard, making dinner with homegrown and local produce, I hope to build increased relational environmental values for my friends and myself as our time at USC comes to a close, and we can transfer these values to wherever we may end up next.



I also hoped to incorporate themes of anti-consumption and the Slow Food Movement, where we can still eat good, clean, and fair food without spending a lot of money and time. Good meaning quality for the consumer, clean meaning it's a low impact on the environment, and fair meaning it is sustainable for producers and accessible for consumers. I attempt to incorporate all three aspects of the Slow Food Movement by creating homemade food (good), to create a vegan low-waste meal (clean), derived from homegrown or local foods (fair).



Spring Produce



Here is the list of produce that I decided to select from as I decided to choose recipes for my dinner. I wanted to stick to what was currently in season because while all produce has lower emissions than meats, poultry, or animal products, it takes less energy to grow plants that can grow naturally during the season. Out-of-season produce may be available all year round, but it is usually grown in greenhouses or transported long distances, both requiring extensive energy and, in turn, higher emissions. A good tip for trying to buy in-season produce is to buy from a local farmers' market, or even better, try growing something yourself!

- 
- Apples
 - Apricots
 - Asparagus
 - Avocados
 - Beets
 - Blueberries
 - Broccoli
 - Cauliflower
 - Brussel Sprouts
 - Cantaloupe
 - Carrots
 - Celery
 - Herbs
 - Kale
 - Kiwi
 - Lemons
 - Lettuce
 - Limes
 - Mushrooms
 - Mangoes
 - Onions
 - Oranges
 - Peas
 - Pineapples
 - Plantains
 - Radishes
 - Rhubarb
 - Spinach
 - Strawberries
 - Turnips

Dinner Prep

I planned my dinner to be prepared throughout the week so I could have enough time to serve everything I intended to have at my dinner while also keeping stress levels low. I also wanted enough time to experiment and manipulate the recipes, as it was my first time making everything on the menu.

<i>Sunday</i>	<i>Monday</i>	<i>Tuesday</i>	<i>Wednesday</i>	<i>Thursday</i>
<p>Trader Joe's and Target Run</p> <p>Grocery List:</p> <p>Trader Joe's:</p> <ul style="list-style-type: none"> • Rosemary • Spring salad • Dijon mustard • cashews • tofu • coconut cream • oat milk • mangoes <p>Target:</p> <ul style="list-style-type: none"> • pasta • nutritional yeast 	<p>Prepare Ice Cream</p>	<p>Prepare Focaccia</p>	<p>Farmers Market</p> <p>Grocery List:</p> <ul style="list-style-type: none"> • Strawberries • Onions • Cauliflower 	<p>Dinner Party Today!</p> <p>To Do:</p> <ul style="list-style-type: none"> • Prepare pickled onions • Prepare salad • Prepare pasta • Bake Focaccia • Put ice cream in fridge

A decorative border of blue flowers and green leaves surrounds the central text. The flowers are small, five-petaled, and have yellow centers. The leaves are small, oval-shaped, and arranged in pairs along thin green stems. The stems are curved and looped, creating a circular frame around the text.

Recipes

Rosemary Focaccia

If you have never made bread before, it usually looks like a daunting process. Focaccia is the exception. Out of everything I made for my dinner, the focaccia was the easiest, but also everyone's favorite. It can be prepared the day of or the night before, and you can select from a wide variety of toppings. It is even easier with a stand mixer, but as the average college student, kneading with your hands also works perfectly.

Ingredients:

- 1 $\frac{3}{4}$ cups warm water
- 2 teaspoons cane sugar
- 1 pack active dry yeast (2 $\frac{1}{4}$ teaspoons)
- 4 cups flour or bread flour
- 2 teaspoons sea salt
- Flaky sea salt for topping
- 6 tablespoons olive oil (I usually never measure this and use as much as I want to sufficiently cover the pan and dough)
- Rosemary for topping
- Balsamic vinegar

Instructions:

1. In a large bowl, add the warm water and sugar. Sprinkle the yeast on top of the water and mix it in. I cover it with a towel and set it aside for about 5-10 minutes. When time is up, the yeast should be foamy. If there is no foam, your yeast is bad, and you should discard it and try again.
2. Add in flour and salt and start mixing to combine. I start with a big spoon, and once more combined, I go in with my hands and knead until a shaggy dough forms. For focaccia, you want the dough to be on the stickier side, as we want a super airy bread.
3. Grab the tray you intend to bake your bread in, and coat it generously with olive oil. Transfer your dough to the tray and pour additional olive oil to coat the top of the dough.
4. Cover your dough with a towel. You can either set aside to rise for 1 to 2 hours, or place in the fridge overnight.
5. Once the dough has approximately doubled in size, add additional olive oil if necessary to ensure the top of the dough is still coated. Use the additional oil to shape the dough, and it is spread it to all edges of the tray. Set aside to rise for about 30-45 minutes, cover again with a towel. Set oven temperature to 425 degrees F.
6. Drizzle flaky sea salt and rosemary over the dough and make indentations in the bread for oil and toppings to rest. Bake for 20-30 minutes until golden brown.
7. Serve with olive oil and balsamic vinegar.





TRADER JOE'S
BALSAMIC VINEGAR OF MODENA
ACETO BALSAMICO DI MODENA PGI
Product of Italy
NET 5.9 FL OZ (170.5 mL)

TRADER JOE'S
PREMIUM
EXTRA VIRGIN OLIVE OIL
COLD PRESSED
9.9 FL OZ (297.9 mL)

Strawberry Salad and Lemon Dressing

I thought the salad would be the easiest dish for my dinner, but it ended up requiring multiple complex decisions. I wanted to choose a salad that featured seasonal ingredients while also experimenting with ingredients I have never used before, such as nutritional yeast. Nutritional yeast is used in many vegan dishes, and in this case, it is used in the dressing to add a cheesy and nutty flavor. I also decided not to incorporate nuts in the salad and replace them with hemp seeds, which have great nutritional value, and some of my friends don't enjoy nuts. This recipe also features home-grown lemons and self-pickled onions. I also decided to source ingredients I found available at the farmers market!

Ingredients:

Salad:

- 5 oz (1 bag) Spring Salad Mix
- 8 oz Strawberries
- 1 Red Onion (I used half to make pickled onions!)
- ½ cup hemp seeds, or almonds, pecans, etc

Dressing:

- 3 tablespoons lemon juice
- 2 tablespoons nutritional yeast
- 1 tablespoon olive oil
- 1 tablespoon maple syrup
- 1 tablespoon dijon mustard (can sub out or use less as friends noted they didn't want a strong mustard taste)
- salt and pepper to taste

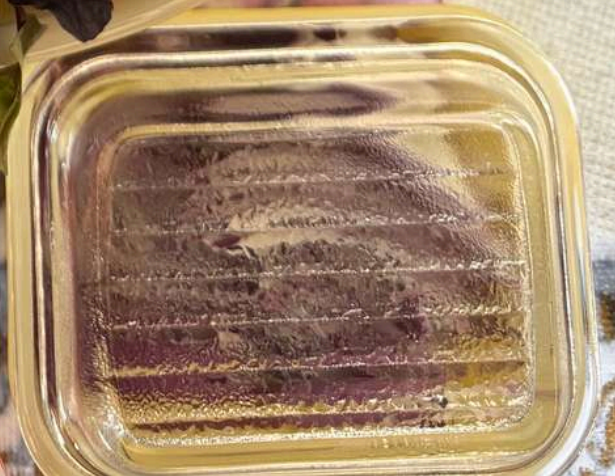
Pickled Onions

- ½ red onion
- ½ cup rice vinegar
- ½ cup water
- pinch of salt
- Optional add-ins: peppercorns, red pepper flakes, thyme, garlic, etc

Instructions:

1. **Dressing:** mix all ingredients in a bowl or jar and mix/shake well
2. **Pickled onions:** Slice the onion and reserve the amount you want to pickle. In a jar, add rice vinegar, water, and salt, and microwave for 1-2 minutes or bring to a simmer on the stove in a pot or pan. Pour the mixture over the onions and allow to cool. Cover and place in the fridge for a minimum of 1 hour or a maximum of 3 weeks.
3. **Salad:** Combine all salad ingredients, add dressing, and onions.





Lemonade and Orange Creamsicle Cocktail



My backyard lemon tree has given me so many lemons that I give them to the neighbors, my friends, and still have enough for myself! At home, my parents also give me home-grown produce, and we still had some lingering oranges nearing the end of the season. Both beverages are always popular during friend gatherings, and are easy to make together as they both require fresh fruit juice and simple syrup. I have also made strawberry lemonade that friends love!

Ingredients:

Lemonade:

- 1-1 ½ cups lemon juice
- 2 cups water (for simple syrup)
- 2 cups sugar
- 4-6 cups water (to taste, depending on how sour or sweet your preferences are)
- ice
- Optional: 1 cup strawberries

Orange Creamsicle Cocktail:

- 2 cups vodka
- ½ cup water (for simple syrup)
- ½ cup sugar
- 1 cup orange juice
- 1 cup lemon juice
- 1 cup sparkling water
- Ice

Instructions:

Lemonade:

1. Juice the lemons and set aside. In a small-medium pot, bring water for the simple syrup to a boil. Gradually add sugar and mix until completely dissolved.
2. Pour lemon juice, ice, and half the amount of water into your serving pitcher. Gradually add simple syrup until desired sweetness and water until desired sourness.
3. Note! For strawberry lemonade, blend strawberries with a little water and strain into the pitcher with lemonade.

Orange Creamsicle Cocktail:

1. Juice the lemons and oranges, and set aside. In a small-medium pot, bring water for the simple syrup to a boil. Gradually add sugar and mix until completely dissolved.
2. Add vodka, ice, simple syrup, lemon juice, and orange juice, and stir. Add in sparkling water and stir again.

Note: Combine ingredient amounts for simple syrup and juice and you won't need to repeat the steps for each beverage!





Fettuccine Alfredo with Cauliflower and Cashew Sauce



This recipe was likely my most difficult as I have never made a vegan paste before. I was worried about what people would think about the flavor and consistency. I had to modify the sauce several times to get it to my liking, but then had to make further changes when I tasted it on the pasta. Overall, this recipe will likely change once I make my second attempt. Some thoughts would be to experiment by adding onion, plant milk, or more lemon juice to enhance the flavor and consistency of the sauce. Vegan cheeses would also be a fun way to experiment with the recipe as well. You will also need a blender or food processor to make the sauce.

Ingredients:

- 12 oz cauliflower florets (or 1 big bunch)
- 2 tablespoons nutritional yeast
- ½ cup raw cashews
- 1 teaspoon salt
- ¼ cup olive oil
- ½ teaspoon Dijon mustard
- ½ cup water
- ground black pepper
- 2 garlic cloves (I usually add more)
- 16 oz (1 pack) vegan pasta
- 2 tablespoons fresh lemon juice
- chopped parsley for garnish

Instructions:

1. Bring a large pot of water to a boil. Add cauliflower and cashews for about 10 minutes or until soft. Drain the water and add it to the blender.
2. Add olive oil, water, garlic, lemon juice, nutritional yeast, salt, mustard, and pepper. Blend until smooth.
3. Cook pasta until al dente, drain pasta, and save 1 cup of pasta water.
4. Add pasta, pasta water, and sauce into the pot to combine. Add extra pasta water or other ingredients to preferred taste.
5. Serve with parsley

Potential Edits:

*Here are some potential changes I would make!

- Sauté 1 yellow onion with garlic for about 5 minutes until softened, then add to blender with other ingredients.
- When adding ingredients to the blender, add 1 cup of almond milk, double the lemon juice to 4 tablespoons, and add an additional tablespoon of Dijon mustard.
- Instead of using cauliflower, replace it with 1 cup of boiled cashews.





Tofu Ice Cream

Ice cream was the perfect way for me to experiment with vegan desserts and was ideal for making multiple seasonal flavors. I chose to make mango and chocolate, but I would love to work with different flavors the next time I make this. It would have been smoother if I had used an ice cream maker, but instead, I prepared my ice cream a couple of days before, and placed it in the fridge the morning of my dinner. My ice cream ended up being of good consistency and good flavor. For the mango ice cream, I added less tofu and used coconut cream. The chocolate ice cream, I decided to add more tofu and used oat milk to best complement the flavors while maintaining a good texture.

Ingredients:

- 11 oz soft tofu
- $\frac{3}{4}$ cup milk (I used coconut cream and oat milk, but any plant milk can be used)
- $\frac{1}{2}$ cup sugar
- $\frac{1}{2}$ tablespoon vanilla extract
- $\frac{1}{4}$ teaspoon salt
- Optional Ingredients:
 - 2 tablespoons cocoa powder
 - 2 cups of fruit (I chose mango, but it can be any fruit based on seasonality)




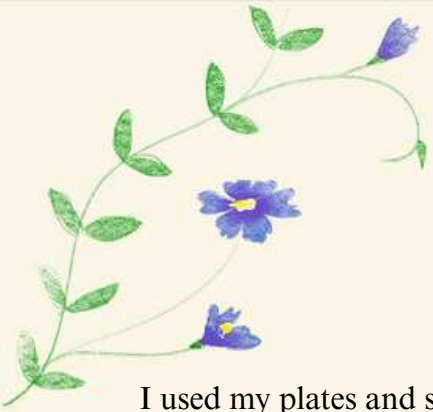
Instructions:

1. Add all ingredients to a blender or food processor. Blend until smooth.
2. Add the mixture into either a container for freezing or an ice cream maker. If freezing only, the mixture should be prepared a day in advance and left to harden overnight. If using an ice cream maker, reserve at least 20-30 minutes until the ice cream reaches a firm but creamy consistency.
3. Add any optional toppings such as fresh fruit or syrups!





After the Dinner



I used my plates and silverware (as I am also a big fan of vintage Pyrex and glassware). However, the plastic cups and paper towels made their way to the table as I have no cloth napkins or enough cups for 6 people. The cups ended up going in the recycling bin, and the napkins were able to go into the compost with the scraps made when making the dinner. After the dinner, some friends took leftovers, and I also packed some leftovers for myself. All other scraps went into the compost bin.

It was super easy to compost everything, as you cannot compost any meat or dairy. Also, considering I have a backyard, I have my own compost bin I received from LA Sanitation, which I transfer to a USC compost bin if and when I need to. However, with most college students, if they live on campus, all residential buildings have compost bins. If the student lives off-campus, there are many outside bins in the village or on campus to dispose of scraps. I was also able to throw in paper packaging from my ingredients, such as the paper box the strawberries came in, and the yeast packet. All other ingredients I either had in bulk, such as flour, sugar, mustard, and other ingredients, I have not yet used up. Other ingredients, such as the parsley, tofu, pasta, and salad, came in plastic packaging, which I recycled.

Overall, almost nothing I bought for the meal ended up going into the trash, and it was amazing to experience. I would say a big factor in reducing waste was going to the farmer's market for most of the produce, as I bought the cauliflower, onions, and strawberries without any additional packaging.



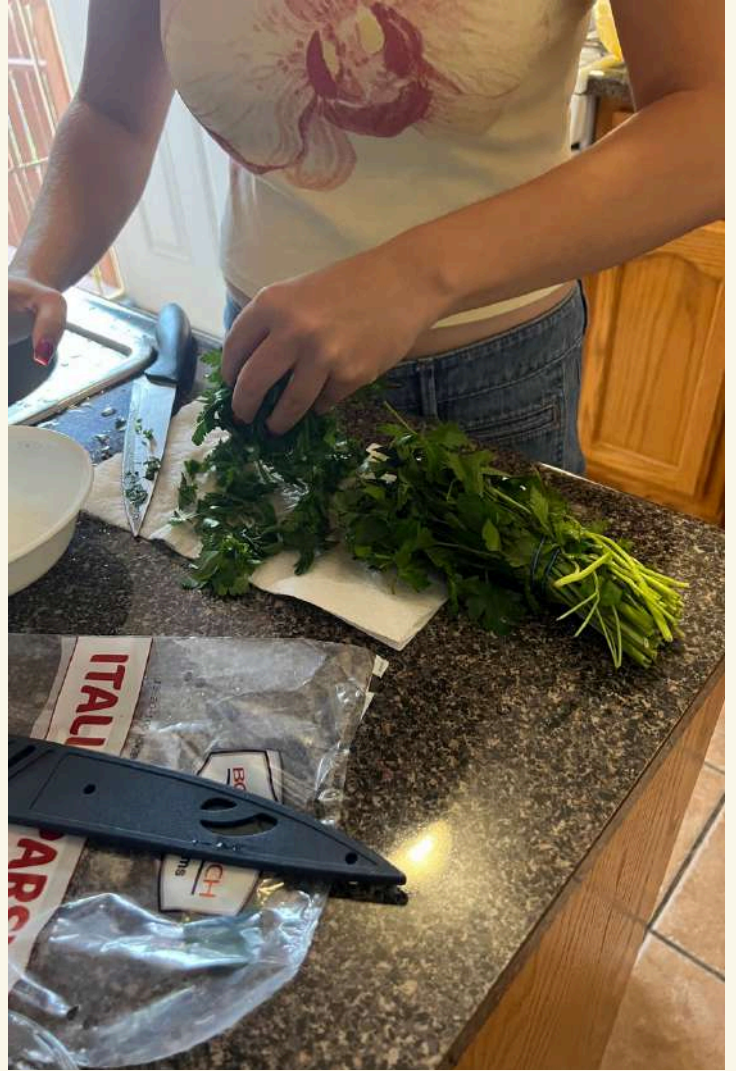
Reflections

First of all, I am very proud of myself for planning the largest dinner night I have ever done during college. The week of the dinner was filled with stress of prepping the ice cream, foccacia, and shopping for all of the right ingredients to make the best dinner for my friends. However, I still really enjoyed myself along the way, such as conversing with vendors at the farmers market and spending a day in the kitchen doing what I love.

Deciding to make a vegan dinner instead of a more “realistic” dinner for students was a consideration for this cookbook. I believe that a meal with vegetarian or lower-emission animal products would have been more realistic, but I wouldn’t have been able to push myself to the extent I wanted. Additionally, as this is also a low-waste cookbook, all leftovers and food scraps are compostable, making cleanup post-dinner easy. For some of my friends, they consider this as their first vegan meal. It was fun to be able to explain my intent for the dinner night, and how accepting they were of the meal, and to spend an evening together.

My friends truly appreciated the meal. After a post-ranking, the focaccia was deemed the favorite. All parts of the meal were enjoyable, but if I were to do it again, I would have made my proposed modifications. It was also great to hear how some of my friends were now more willing to participate in meatless or vegan meals in the future! Though it was more difficult to prepare vegan meals, I would say it was no different from cooking a new meal and modifying it for future attempts. The USC farmers market was also a great feature of our campus that allows for college students to support the local community and actively reduce their environmental footprint.

Overall, this experience was very rewarding and was a great experiment to close out my time as a college student. This was a great addition to the many memories I have spent with my friends, and I will always enjoy hosting dinner parties. As I think about future meals, cooking meatless or vegan meals is no longer as daunting as I thought it would be, and I can imagine myself setting aside some nights a week for these meals. Nevertheless, I hope to continue this journey and be able to reflect on this amazing experience!





Thank You!

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